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CONTENTS

ORIGINAL ARTICLES—

BISMUTH PASTE IN SURGERY. By *Emil G. Beck, M. M., F. A. C. S.*, Chicago 157

SUPPLEMENT TO THE ABSTRACT TO BISMUTH PASTE TREATMENT OF WOUNDS. By *Emil G. Beck*, Chicago 158

FRACTURES CONSIDERED AS POTENTIAL DEFORMITIES. By *M. S. Henderson, M. D., F. A. C. S.* Rochester, Minn. 163

THE RELATION OF PHYSICIAN AND DENTIST IN THE TREATMENT AND PREVENTION OF DISEASE DUE TO DENTAL FOCAL INFECTION. By *Henry B. Clark, Exodontist*, St. Paul, Minn 168

THYROID DEFICIENCY—THE IODINE REQUIREMENT DURING PREGNANCY. By *G. Ennis Smith*, London, Canada 172

THE CONTROL OF VENEREAL DISEASES. By *Edward C. Gager, M. D.*, St. Paul, Minn. 173

THE TRANS-RECTUS INCISION IN THE UPPER ABDOMEN. By *Robert Emmett Farr, M. D.*, Minneapolis, Minn. 176

TUBERCULOSIS IN CHILDREN—ITS PREVENTION. By *W. D. Beadie, M. D.*, St. Paul, Minn. 181

(Continued on Advertising Page III.)

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ORIGINAL ARTICLES

BISMUTH PASTE IN WAR SURGERY

Emil G. Beck, M. M., F. A. C. S.
Chicago.

The author presented a resume of his work on Bismuth Paste treatment in chronic suppurations due to disease and also crushing wounds, illustrating the technic by means of moving films. The results obtained eliminate at least sixty-five per cent of all chronic suppurations, after they have gone through the usual procedure of surgical treatment. The balance of thirty-five per cent he treats by the skin sliding operation, without any suture of the skin flap. Illustrations of cases were shown by slides. The results were most satisfactory, since it eliminated nearly all the cases which had resisted previous surgical as well as Paste treatment.

The principal points brought out were as follows:

Errors in Technique

1. The method is often applied indiscriminately, without control by radiograms.
2. The mixture, when injected, is not sufficiently liquefied to fill all the sinuses and suppurating cavities.
3. The bismuth is applied in cases in which either a sequestrum or infected foreign body is at the bottom of the trouble.
4. The injections are often kept up after the wound is sterilized and thus no chance is given for healing.
5. The instruments used are often improvised and unsuitable.
6. The bismuth mixture is very often spoiled by the accidental mixture of a few drops of water. (Syringes should be perfectly dry when used.

The sinus or fistula is nothing more than a shrivelled abscess or abscesses. It leads from its opening on the skin or into the bowel to the place where the disease originated, and this focus of disease is often at a considerable distance from the opening or openings of the sinus. It is therefore inconsistent to try to eradicate the suppuration by only dissecting the sinus tracts. With the radiographic reproductions of the labyrinths or sinuses before us, an attempt to dissect the same would be absolutely hopeless.

If the focus from which the sinus originated is reached and disinfected, in practically all instances the sinuses will close up. It is therefore essential that when a fistula or sinus is injected with Bismuth Paste, it must reach the focus of the disease. If, through faulty technic, this is not accomplished, good results can not be expected.

Indication

A. All sinuses resulting from chronic suppurative joint affections, tuberculous as well as non-tuberculous. This includes the sinuses especially after spondylitis and hip joint diseases.

B. Sinuses after osteomyelitis of long bones and flat bones, including ribs.

C. Sinuses resulting from suppurative diseases of parenchymatous organs, such as the kidney and other glandular structures in the body, including suppurative tuberculous glands.

D. Post-operative sinuses which sometimes remain after draining infected wounds.

E. Sinuses after empyema of the pleura or from lung abscess.

F. In cases of abscess and suppuration of the mammary glands.

G. In all infected wounds due to crushing injuries.

H. In infected and long suppurating war wounds due to shrapnel or bayonet injury.

It has already been tested in these and found most effective. The rapid accumulation of this class of cases due to the present war in Europe will furnish a tremendous amount of material for treatment.

I. In rectal fistula or pararectal abscesses.

K. By Oto-Laryngologists in the treatment of suppurative antrum disease and accessory sinuses, as well as in the after treatment of mastoid operations.

L. By dentists in suppurative sinuses about the teeth and jaws and in pyorrhea alveolaris.

M. It has also been used by us in chronic endometritis.

N. In the prevention of sinuses by incising the cold abscess and injecting it with a five per cent Bismuth Paste.

Summary

To insure success in employing Bismuth Paste the essential points are summarized as follows:

1. One should make a correct diagnosis by all the methods at his disposal and corroborate the same with stereoscopic radiograms, before an injection is made.

2. Before attempting to employ this method one should acquaint himself thoroughly with the technic.

3. The proper instruments should be employed in order to carry out the technic correctly.

4. The patient should be kept under constant observation to prevent bismuth intoxication.

5. Examine the secretions from the sinus before the first injection, by slide and culture, and often by the inoculation of guinea pigs; then three days later test the sterilizing effect of the injection.

6. As long as the sinus contains microorganisms it should be reinjected but if it is found sterile, it should not be reinjected.

7. It is good practice to wait at least one week after the first injection before repeating it.

8. A stereoscopic radiogram of the parts affected should always precede the first injection, in order to detect the presence of foreign bodies. The shadow of the paste might make their presence obscure.

9. Following the injection a second set of stereoscopic radiograms should be taken in order to make a correct anatomical diagnosis.

10. In case a foreign body or sequestrum is present, the injection is useless, operation the only means.

11. Acute suppurative processes should not be treated with Bismuth Paste, only chronic suppurations, both tubercular and non-tubercular.

12. Bismuth poisoning may be easily prevented by using only small quantities or when large quantities are required they should not be retained longer than ten days, and the patient should be carefully watched.

13. Fecal fistula and other post-operative sinuses are very favorably affected by Bismuth Paste treatment.

14. A ten per cent bismuth vaseline may be used in cold abscesses. In practically all instances the secondary infection can be prevented, providing the technic is carefully observed.

SUPPLEMENT TO THE ABSTRACT ON BISMUTH PASTE TREATMENT OF WOUNDS

EMIL G. BECK
Chicago

After all these rules of the Bismuth treatment have been observed and the cases treated for a sufficiently long period and persist in discharging, they should not be given up as entirely hopeless, because in our experience we have found that by a surgical measure, based on certain surgical principles, we have been able to close up the majority of these apparently hopeless cases.

The procedure is as follows:

Skin Sliding Operation for Osteomyelitis

After the diseased area is located by means of roentgenograms, it is freely exposed by cutting away all the unhealthy skin and scar tissue. The diseased bone is then thoroughly curetted or chiseled away until one is certain that there is not a vestige left. Should this produce a deep groove, it must be converted into a very shallow one or even into a flat surface, by cutting away a sufficient quantity of healthy bone on either side.

After this is done, a skin flap is cut from one or each side, sufficiently large to cover almost

the entire denuded bone surface, care being taken, however, that no subcutaneous fat is carried with it. The flaps are then shifted into the depth of the cavity and retained there by packing gauze against them. It is not absolutely necessary that every part of the bone cavity should be covered. The skin will grow from the edges of the flaps until every portion of the raw bone surface is covered with true skin. To prevent retraction or slipping of the skin flaps, I have frequently used a carpet tack to fasten temporarily the tip of the skin flap to the bone until adhesion has taken place. The areas of muscle and subcutaneous tissue which have been exposed by sliding the skin are left denuded. No attempt should be made to bring their edges together by suture or otherwise. In only very rare instances has it been necessary to use any suture material whatever, except, of course, the ligation of bleeders.

Forty-eight hours later the gauze pack which has kept these flaps in apposition to the denuded bone surface is removed, and it will be found that firm adhesion has already taken place. In one case, in which an assistant displaced one of the flaps during the application of the dressing immediately after the operation, I was unable, twenty-four hours later, to replace the skin flap in its proper place, until I had loosened it with a raspatory. The rapidity with which adhesion of the skin to the bone takes place is remarkable.

The after-treatment is most interesting. As soon as granulations on the denuded surfaces from which the skin has been removed, begin to form, strips of adhesive plaster are applied, covering the margins of the skin border and the granulating surface all around the wound. This procedure will produce rapid epidermization of the denuded surface. The adhesive is changed daily. Within two or three weeks large areas will be covered by healthy skin and in practically every instance the suppuration will stop after the denuded area has been epidermized. Small scars, of course, remain but will gradually shrink, so that a denuded surface the breadth of three fingers will have a scar no wider than one-half centimeter.

When the wound is not too deep, the skin flap may be omitted. It is simply left widely gaping and packed with gauze and allowed to granulate from the bottom. Later on adhesive plaster is put on the edges of the wound.

I have employed this method of skin sliding in a variety of cases; osteomyelitis of the femur, tibia, in hip-joint disease, in knee-joint disease, in the removal of the oscalcis and of the metacarpal bones, in osteomyelitis of the ribs and of the sternum, and in other cases, including infected fractures and other injuries.

The same principle may be employed in cases of empyema and lung anscess. I have described this in detail in the March number of Surgery, Gynecology and Obstetrics:

"Sutureless Skin-Sliding Method for the Radical Treatment of Lung Abscess and Chronic Osteomyelitis"

and cited interesting cases for illustration. Thus far my experience in this treatment is limited to about sixty cases, consisting of a variety of bone and joint diseases, such as osteomyelitis of the femur, hip joint, knee joint, tuberculous of the ribs and sternum, about ten cases of tuberculous ankles, and five cases of dermoid cyst of the sacrum. There was no mortality in the osteomyelitis cases and only three out of fifteen in the lung cases, two of which were due to anesthesia and one of brain abscess. The end results are most satisfactory. The apparently hopeless cases operated about a year ago are now entirely well and out of the entire series only the recent cases operated upon are not yet closed and the treatment progressing most satisfactorily.

For illustration, I cite a few cases from the series treated with Bismuth Paste with or without surgical operation.

Spondylitis with Multiple Sinuses

Bismuth Treatment Without Operation

N. O., fourteen years old, developed a tuberculous spondylitis when two years old. Multiple abscess formed, not only in the back in the region of the sacrum but also above both Poupart's ligaments, so that at the age of eight he was riddled with multiple sinuses, as shown in Fig. I. (This picture illustrates the technic of injection of one sinus and occluding the other openings as soon as the paste appears to exude from them, so that the channels may be filled).

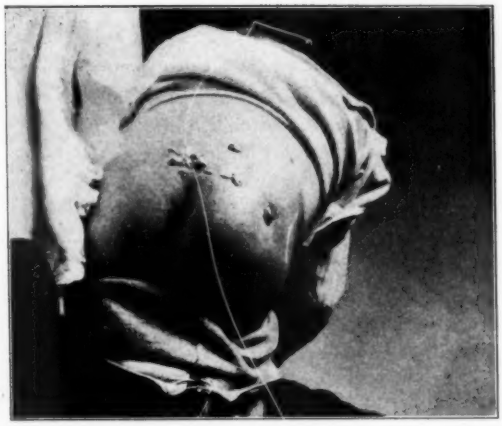

Fig. I. Condition at Age of Eight Years.

The child was then in a pitiable condition, had never walked since it was born, and could not extend its lower limbs, same being flexed upon the abdomen and rigid.

The bismuth treatment was than carried out for six months and improvement was so rapid that he was able to crawl on his hands and feet across the room. The treatment was interrupted for one year, although some of the sinuses still discharged slightly. In 1914 the treatment was resumed and all the sinuses closed except two, one above the right Poupart's ligament and one in the region of the right crest of the ilium. He was then able to walk erect and take part in all children's play, including base ball.

Fig. II. Patient Six Years Later, Able to Bend. Sinuses Closed.

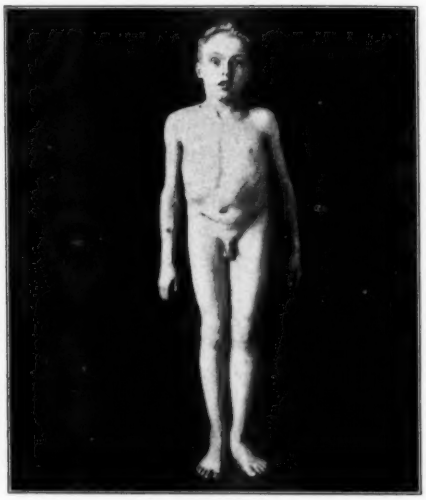

Fig. III. Patient Able to Stand Erect.

In 1917 the bismuth treatment was resumed, to close the last sinus. Injecting the sinus in the region of the ilium, the paste would appear in the opening above Poupart's ligament. This sinus closed also and the boy is able to stand erect, as shown in Fig. III, and is able to bend to a degree as shown in Fig. II. The agility with which this boy can now move about is surprising to those who have seen him at the age of eight, when no one expected that anything could be done in the case.

Fig. IV. Drainage in Six Places.

Fig. V. Sinuses Closed After Injection.

Fig. VII. Flexion.

Crushing Injury of Foot Treated With Bismuth Paste

E. P., a man of twenty-two, while riding a motorcycle, was run over by a motor truck. The right foot was crushed completely by the heavy wheel (see Fig. IV). The heel having been torn away, it was replaced and gauze drains introduced. On account of the virulent type of infection, condition grew worse, the fever rose to 105 degrees, so that an amputation was contemplated. Gradual improvement, however, took place and a profuse chronic suppuration from six different sinuses resulted, persisting for two months.

Injection of bismuth paste was then resorted to. Within three days the purulent discharge became serous in character. From then on the condition improved rapidly and the sinuses began to close. (Fig. V). Within two months the limb was entirely healed and gradually assumed normal shape. Patient is now able to walk without the use of a crutch. (Fig. VI and VII show the foot in flexion and extension.)

Infection of Bone Plates. Treatment With Bismuth Injections Subsequent Skin Flap Operation

A young man of twenty sustained a fracture of his left fibula. There was no abrasion on the skin. One week later a surgeon performed an operation, splinting the fragments with

Fig. VI. Final Result (Extension).

Fig. VIII. Necrosis of Skin and Muscle.

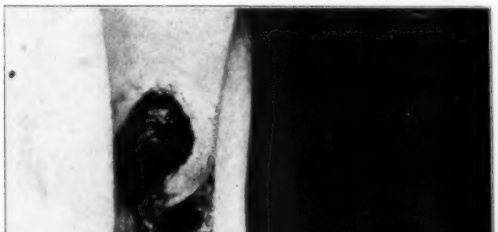

Fig. IX. Four Days After Skin Sliding Operation.

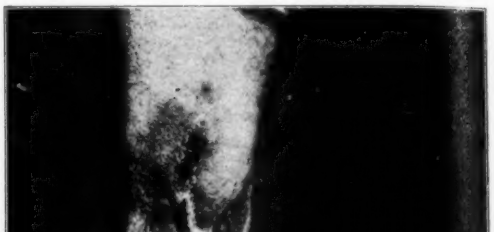

Fig. XI. Two Months After Operation.

two steel plates. The day following the operation the young man developed a most extreme chorea, so severe that it required two men to hold him in bed. A week later I saw him in this condition. On removing a part of the cast, we found the entire area of incision in a semi-gangrenous condition, the sutures having cut through the tissues and pus oozing from all parts of the edematous and inflamed limb. (See Fig. VIII.)

The bone plates were removed and the infected wound was treated with bismuth paste injections for two weeks. No irrigation was employed. Subsequently the remaining cavity was curetted and a skin flap about two and a half inches wide and four inches long was denuded from the edge and shifted into the depth of the wound. Gauze was packed against it so as to keep it in place for healing. Adhesion of skin flap took place and growth of skin from the side of the flap progressed rapidly (as seen in Fig. IX, taken four days after the operation). The denuded surfaces of muscle and connective tissue were treated by the adhesive plaster method and skin gradually covered the entire denuded surface, as seen in Figs. X and XI. The chorea gradually disappeared, the patient gained thirty pounds and is now able to walk without a cane.

Fig. X. Fourteen Days After Operation.

To resume I would state that the primary-surgical treatment of infections are so effective as to leave very few cases of protracted suppuration. Surgeons have now developed efficient methods, such as the Carrel-Dakin irrigation with hypochlorite and diachlormin-T method, and the total excision of infected wounds in the early stages, which have produced a remarkable diminution in the number of persistent suppurations. The cases which continue to suppurate after these efficient methods have been employed, should be treated with bismuth paste. This method properly employed, will close at least seventy per cent of these refractory cases and only thirty per cent, a very small residue, will remain. For these we again recommend the Sutureless Skin-Sliding Operation here described.

By this systematic plan of treatment, we shall in time be able to cope with almost all cases of one of the most troublesome surgical complications, namely, persistent chronic suppuration.

FRACTURES CONSIDERED AS POTENTIAL DEFORMITIES*

M. S. HENDERSON, M. D., F. A. C. S.
MAYO CLINIC
Rochester, Minn.

Every fracture has within itself the tendency to leave varying degrees of deformity and disability in its wake; any fracture should, therefore, be regarded as a potential deformity. The fact that the treatment afforded fractures as a whole usually gives good functional results indicates that the mechanical principles underlying the treatment are quite simple. In certain types of fractures, particularly those in the vicinity of joints, deformities are especially prone to occur. These deformities are seen with such frequency in an orthopaedic clinic that, even at the expense of appearing tedious, I shall call your attention to a few of the commonest types, and emphasize some of the measures that may be used in their prevention.

The surgeon when confronted with a fracture must make an exact diagnosis and base his treatment on that diagnosis. Fortunately, we have in the radiograph the means at hand definitely to show the break and the relation of the fragments. Unless for very good reasons, for example the inaccessibility to a radiographic apparatus, the poor condition of the patient, etc., a radiograph should be taken of every fracture or suspected fracture. The picture intelligently interpreted settles the pathology at once and affords the sound basis so necessary for rational treatment.

The Shoulder Joint

Following a fracture in the region of the shoulder joint, the usual disability is lack of abduction and outward rotation. This may ensue even when the reduction of the fracture is perfect, since the inflammatory exudates cause periarticular adhesions. If the disability is due solely to periarticular adhesions, it is readily relieved by breaking them up under an anesthetic, followed by massage and the active exercise of the joint; if it is due to an actual bony deformity, it is clearly the fault of the setting.

In a fracture of the anatomical neck, if reduction cannot be perfect without an open operation, a slight amount of displacement may be permitted and the operation avoided as there is almost always good impaction and union is sure to occur. The danger lies in the limitation of motion that may follow. If the patient can stand the confinement, he may be put to bed with the arm abducted to a right angle, the position being maintained by a Buck's extension with a light weight attached. At the end of two weeks union will be sufficiently firm so that the arm may be gradually dropped to the side. The abducted position to a right angle should be resumed by passive motion at least three times daily.

If the fracture is situated at the surgical neck, the tendency is for the pectoralis, major the teres major and the latissimus dorsi to draw the lower fragment inward. The supraspinatus, infraspinatus and teres minor, as opposed to the subscapularis, tend to abduct and outwardly rotate the head and upper fragment (Fig. 1). The tendency of the biceps and triceps is to pull the lower fragment up and past the lower end of the upper fragment. If malunion occurs in this position it is readily seen that abduction and also outward rotation will be limited. If satisfactory reduction and firm impaction by strong extension (best conducted in abduction to a right angle or in the extreme position with the arm parallel to the head) can be accomplished and the ends impacted, the arm may gently be brought to the side and strapped there after an auxillary pad is placed in position. If the arm is held in abduction at a right angle after reduction and impaction, the pull of the pectoralis major, latissimus dorsi and teres major is in the long axis of the bone and the muscles do not tend to slip the fragments past one another (Fig. 1). The maintenance of the arm in abduction by a Buck's extension for two weeks, followed by the gradual dropping of the arm with tri-daily resumption of right angle abduction, is a form of treatment which ensures a good result. In the case of a bad intra-articular fracture in which ankylosis or marked limitation of motion is unaviodable, the ankylosis should be allowed to occur with the arm in abduction at a right angle. The movement of the scapula on the thorax,

*President's address before the Southern Minnesota Medical Association, Mankato, January 20-21, 1919.

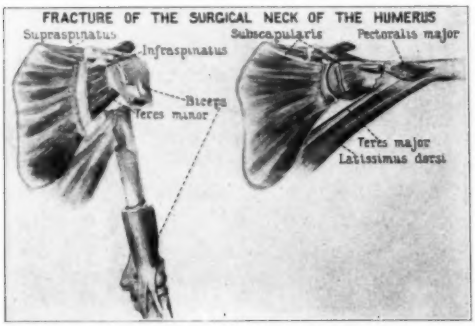

Fig. 1. Fracture of the surgical neck of the humerus.

when the head of the humerus is ankylosed at a right angle to the neck of the scapula, permits a very satisfactory range of motion for the arm.

The Elbow Joint

Fractures near the elbow joint are noteworthy for the bad results that may ensue. The common deformity is lack of ability to flex the elbow sufficiently to permit of ability to dress, for example putting on a collar or, in the case of a woman, dressing the hair. If the head of the radius is involved in the fracture, there may also be lack of pronation and supination. Sir Robert Jones lays down the following golden rule for the treatment of fractures of the elbow: "They should all be treated with the elbow fully flexed and the forearm supinated with the single exception of fracture of the olecranon, which requires full extension." The loss of flexion so dreaded may be due either to imperfect reduction or excessive callus formation. In a supracondylar fracture the lower fragment, as a rule, is displaced backward, the upper fragment is displaced forward in front of the lower and is a mechanical obstruction to full flexion unless the reduction of the fracture is complete (Fig. 2). Such a fracture is best reduced by partial flexion of the elbow to a right angle or more, then the exertion of firm, strong downward traction on this and manipulation of the lower fragment onto the upper. The latter part of such a reduction is greatly aided by complete flexion of the elbow with the forearm in supination. The strong tendon of the triceps muscle posteriorily and the coronoid process of the ulna with the attached muscles in front, steady the fragments in position. For the subsequent treatment I quote again from Sir Robert Jones: "After three or four days, when absorption of the immediate exudates is well advanced and repair has begun, and when in particular the muscles have come to rest, the elbow need not be so acutely flexed, but the forearm should be slung by the wrist close under the chin. Between the second and third weeks, when bony union is fairly secure, the wrist may be dropped two or three inches, and the patient may practice active movements daily, producing full flexion and then allowing the arm to fall down to the limit allowed by the sling. If the movement can be satisfactorily performed, the sling can be lengthened every two or three days until a right angle is reached when it can be discarded altogether." The right angled splint so often seen need only be mentioned to be condemned. No splint is necessary in the treatment of fractures in the region of the elbow with the exception of those of the olecranon process of the ulna. With the elbow flexed and adhesive plaster placed around the arm and forearm, the position is very nicely maintained. If the fracture involves the condyles, thus being intra-articular, there is often a spreading, as it were, of the elbow. Manipulation and forcing of the joint into acute flexion will usually control the fragments as well as they can be controlled. If a piece of one of the fragments lodges in front of the joint and prevents flexion, an incision must be made and the obstructing piece removed. It is true that full motion will not be obtained by any method

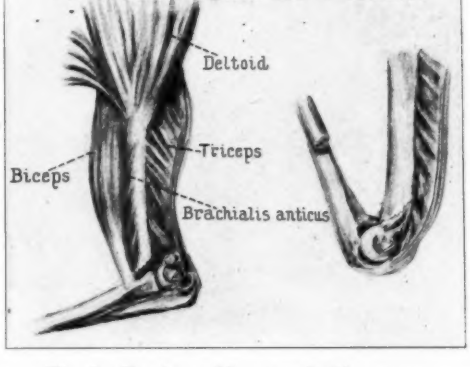

Fig. 2. Fracture of lower end of humerus.

in this intraarticular type of fracture, but satisfactory flexion will be secured. When the neck or head of the radius is fractured it may be necessary to remove the head, but not infrequently the fully flexed position with the hand in full supination will secure a very satisfactory result.

The Wrist Joint

It is not uncommon to see deformity and disability following a Colles' fracture. The dinner fork deformity causes pain, soreness and inability to grasp objects. This is almost always due to inefficient reduction. There are undoubtedly a certain number of Colles' fractures in which the force causing the impaction at the time of the accident is so great that a good deal of the cancellous bone is destroyed and the normal contour of the wrist cannot be restored. In such cases the aim must be to break up this impaction to such a degree that the normal line of the continuity may be restored as nearly as possible and the muscles permitted to pull in their normal axis. Even if there is considerable radial deflection because of loss of substance in the radius, function will be remarkably good if the fragments are in the same anteroposterior plane. In my experience the textbook plan of reduction by grasping the patient's hand and pulling is not in itself sufficient. The patient is seated in a chair and an assistant grasps firmly the patient's forearm which is held midway between pronation and supination. This leaves both hands of the surgeon free; he then grips the hand of the patient in the usual way and pulls firmly; as his other hand is free, he is able, by pressure with the thumb and forefinger on the fragments, to force them into line and to mould them in position. If the patient is seen immediately after the accident and before much swelling has occured, the sense of touch conveys the knowledge that reduction is complete. The patient usually volunteers that "it feels much better." If such relief is not experienced one should be guarded in any statement as to complete reduction. In certain cases, I have used the following method of Sir Robert Jones with happy results. "To reduce a left Colles' fracture the surgeon takes the patient's arm in his left hand, with his own scaphoid tubercle against the projecting lower end of the shaft; he then places his right hand on the dorsum of the patient's wrist with his own scaphoid on the projecting lower fragment. A firm grip with a slight traction and twist of the wrist completely reduces the deformity. It requires knack rather than strength." If reduction is complete almost any splint will hold the fragments. Early use of the fingers should be encouraged but the wrist should not be actively used for about four weeks.

Ischemic Paralysis

A consideration of deformities following fractures would be incomplete without mentioning ischemic paralysis, a fearful sequela too often caused by neglect. I have in a few instances seen ischemic paralysis in cases in which no splints had been applied. It is possible that a hemorrhage occured in these few instances and, held in by the strong fascia of the forearm, caused sufficient pressure to devitalize the muscles and nerves. The vast majority of the records state that the fracture was reduced and tight splints applied, and in spite of the agony of the patient and entreaties of relatives and friends for their removal, that they were left on and when finally removed irreparable damage had been done. If the pain following the reduction and splinting of a fracture is extreme, the splints should be loosened at once. Ischemic paralysis is occasionally seen in the lower extremity.

Non-Union

Just when delayed union becomes non-union cannot definitely be stated. Some authorities say that we should always speak of the condition as delayed union, but when it persists for from seven to eight, ten or fourteen years, it would almost seem that the term delayed union applied to such cases is a little farsical. Various conditions such as syphilis, poor blood supply, etc., are mentioned as being responsible for its presence. Inproper reduction and early rough handling to determine whether or not union is occuring are often responsible, but the chief cause for non-union is probably the interposition of muscle between the bone ends. In a considerable number of ununited fractures I have seen but one in which syphilis might have been the cause of non-union.

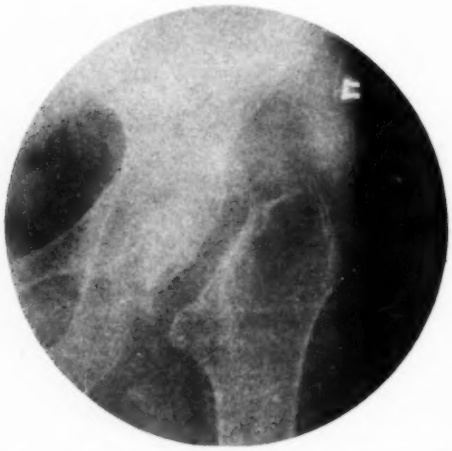

Fig. 3. Ununited fracture of the hip showing total absorption of the neck of the femur.

The Hip Joint

The large number of ununited fractures of the hip (Fig. 3) that are seen is chiefly owing to the fact that the fracture was not recognized and that no treatment was instituted because the condition was erroneously diagnosed sprain. In any injury to the hip, particularly in the aged, a radiograph should be made at once unless the symptoms are so classical that the diagnosis of a fracture of the neck can be made and the proper treatment carried out. Even then, it is much better for all concerned to insist on a radiograph. From the observation of a considerable number of these cases I am convinced that it is almost always better to break down the impaction and to reduce the fracture just as we do a Colles' fracture. The term impacted fracture, the degree of impaction being so difficult to determine in the radiograph, gives, I am sure, a feeling of false security. Undoubtedly many of these impactions break down later and nonunion results. With reduction accomplished, some means should be taken whereby it is maintained. Whitman's abduction method and the Ruth-Maxwell traction methods are both efficacious. Under proper conditions open operation is permissible and a beef-bone screw placed through the trochanter and neck and into the head insures proper position.

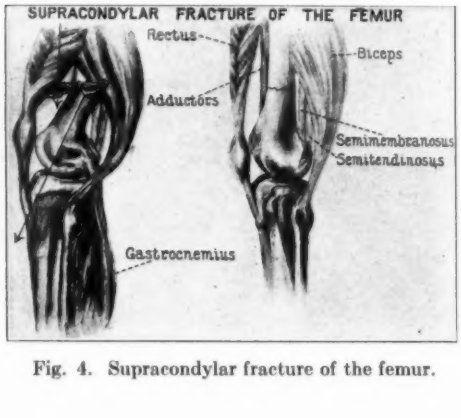

Fig. 4. Supracondylar fracture of the femur.

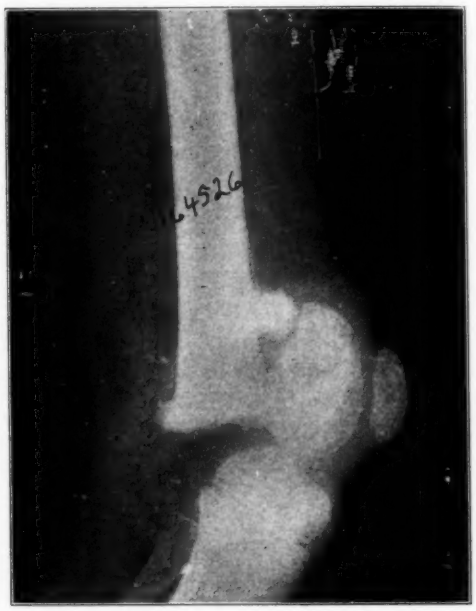

Fig. 5. Epiphyseal separation of lower end of femur with the epiphysis looking directly forward.

The Knee Joint

A supracondylar fracture or one in the lower one-fifth of the femur, so alters the line of weight-bearing in the knee as to cause serious disability (Fig. 4); this is caused by the posterior displacement of the lower fragment. While much is written concerning the efficacy of certain splints in the treatment of this type of fracture, if the separation of the fragments has been so extreme as to allow muscle to be interposed between the fragments, conservative measures are almost invariably fruitless. If proper surroundings and sufficient surgical skill can be obtained, such a fracture should be opened and the fragments coapted and held in place by whatever means is, in the judgment of

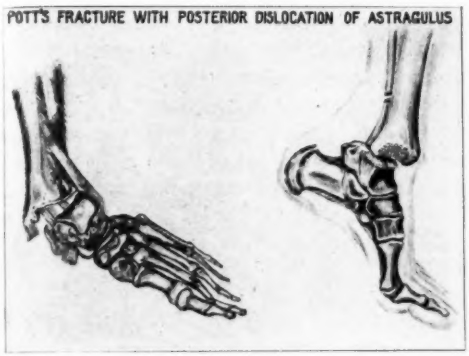

Fig. 6. Pott's fracture with posterior dislocation of astragulus.

the surgeon, correct, be it a metal plate, nails or bone graft. It is remarkable to what extent displacement of the fragments may occur with, comparatively speaking, slight external evidence, and indeed unless one is acquainted with such a fracture, the radiograph will be startling. This is especially true of separation of the epiphysis in children (Fig. 5), in which the condyles of the femur will be found on the anterior surface of the lower end of the shaft of the femur, with the articular surface looking directly forward. In the latter type it is generally necessary to expose the fragments by splitting the patella longitudinally, opening wide the knee capsule, splitting the posterior layer of the synovial sac at will, and by manipulation and prying to force the epiphysis back into place. . The results are usually excellent with full function of the knee.

The Ankle Joint

Pott's fracture consists of a fracture of the fibula two or three inches above the tip of the external malleolus, the strong tibio-fibula ligament prevents fracturing any lower, and a tearing of the internal lateral ligament with occasionally part of the tip of the internal malleolus (Fig. 6). There is not infrequently a posterior displacement of the astragalus. There may be a break of the anterior lip of the lower articular surface of the tibia which is a troublesome complication. If the force has been quite severe the astragalus may be driven upward so that the external superior articular border acts as a wedge and crushes and forces up the external margin of the tibial articular surface, making, as it were, a groove for the astragalus to fit into and rendering reduction more difficult, with a resulting tendency for the deformity to recur. The common deformity seen after this fracture is marked eversion of the foot with the weight-bearing line falling to the inner side. The disability is great. Reduction should be complete and nothing short of this should be accepted. The foot should be held in slight inversion; the ankle should be dorsiflexed to at least a right angle, and care taken that the posterior displacement of the astragalus, sometimes present, is corrected. Weight-bearing, if too early ,may have serious results and should not be permitted under six weeks, for a good position may be lost through the giving way of a soft callus. The inner side of the sole of the shoe and heel should always be raised so that the foot will be placed in slight inversion, and held so for six weeks. For heavy people it is often wise to provide in addition an outside iron and inside T strap (Fig. 7).

Fig. 7. Brace to be used following Pott's fracture showing outside iron, inside T strap and raised inside sole.

Summary

Following a fracture in the region of the shoulder joint, the common disability is lack of abduction and external rotation; in the region of the elbow, lack of flexion, and in the region of the wrist there is the well known dinner-fork deformity with inability firmly to close the fingers. A fracture in the hip is prone not to unite unless adequate fixation is provided after the reduction. A supracondylar fracture of the lower end of the femur or an epiphyseal separation interferes with the proper transmission of weight through the joint surfaces and limits flexion and extension. Pott's fracture is the common fracture of the ankle and not infrequently causes disability by the valgus produced by poor alignment for weight bearing.

If the type of deformity that is apt to follow the particular fracture being dealt with is kept in mind, and if it is recognized that the deformity is potential, better results will undoubtedly be obtained by so vigorously directing the treatment as to guard against poor alignment of the fracture.

THE RELATION OF PHYSICIAN AND DENTIST IN THE TREATMENT AND PREVENTION OF DISEASE DUE TO DENTAL FOCAL INFECTION.*

HENRY B. CLARK, EXODONTIST
St. Paul, Minn.

About eighty years ago Hayden and Harris established in Baltimore the first dental college. Before establishing this school they had gone to the Medical College and asked for permission to establish a dental branch there; this permission was refused. The result has been, dentistry has largely gone her own way, and has drifted far away from what really is the parent profession.

American dentistry, in this drifting, has surpassed the world, in perfection of mechanical treatment of mouth lesions, but she has, at the same time, acquired a pathology which really amounts to little or nothing.

*Presented before a Joint Meeting of the Ramsey County Medical Society and the St. Paul District Dental Society, March 25, 1918.

Who is responsible for the dental pathology of today, or its lack? I will answer that question by asking another. Who are the teachers of pathology in dental colleges today? You know they are, almost without exception, men who write the M. D. after their names. Why have they failed to give us a correct and adequate pathology? A pathology which would not, at this time, require a complete revision? Are dental students lacking in mentality, as compared with medical students? I think not; I think whether a man writes M. D. after his name or D. D. S. has very little to do with the scope of his mentality.

Have we not been given good teachers on pathology? I say we have the best of men as teachers of pathology in our dental schools. The reason then, that pathology has not kept pace with other advances in dentistry is probably due to the separation of the professions. Teacher, student and practitioner have come to look upon the mouth as "primary territory apart from the rest of the body."

Mouth pathology is pathology just as much as is pathology of any other part of the body, and when this becomes clearly fixed in the minds of medical and dental men, it is going to be a help in clearing up some of our mutual problems.

Now the time has come when it has been proven that such an appalling array of human ills are being caused by mouth infections, that we as physicians and dentists, must get together and agree upon the pathology of dental infections.

Investigators in the field of focal infections, are very soon led into the dental field. Rosenow, in what I believe is his latest article says:

"Much of the experimental work I have done has a direct bearing on the problems which confront the dentist in his every-day practice."

And nearly all other investigators, as they begin to see the effects of dental infections upon the health of the physician's patient, immediately express wonder that so little has been done jointly. As Ulrich says:

"It is amazing how little the dentist acts as a guide to correct this systemic suffering, and how little the doctor calls in the dental surgeon."

The reason for this, however, is not hard to find, and is possibly best expressed by another quotation from the same man when he says:

"The far-reaching effect of mouth infections are as little understood by the average dentist, as are these infections appreciated by the average doctor."

But he goes further to say:

"Truly the day is passed when the dentist can hide behind the whir of his drill, and the physician sit tight between doses of salicylates."

To talk about dental infections, I want to draw a picture and review the histology of a tooth. A tooth, as you know, is composed of four histologic elements: the enamel, with which we need have little concern; the dentine; the pulp; and, last, and possibly of greatest importance, from the stand-point of focal infection, the cementum. The pulp is, of course, the soft tissue part, which, when inflamed, necessitates devitalization.

When a pulp becomes inflamed and infected, if left alone it strangulates and becomes a mass of dead tissue.

The main body of the tooth is composed of dentine. From the pulp, all through the dentine, radiate minute, hollow tubules, filled with a protoplasmic fluid; these are the dentinal tubules.

When a pulp dies, or is destroyed, the content of these tubules remains as dead matter, regardless of whether the pulp canal is cleansed and filled, or not. Here is menace number one of a dead tooth.

The dentine of the root is covered by a thin layer of cementum. Cementum is a passive tissue. There is no other tissue like it in the body. It has some characteristics in common with bone, but while bone has circulation and the power of repair within itself, cementum has not. It derives its nutriment entirely from the peridental membrane, which, in comparing it with bone, stands in the same relation to the cementum as does the periosteum to bone. When, for any reason, the peridental tissue is detached from the cementum, that cementum has lost its vitality, and it never will regain it.

The peridental fibre, once detached from the cementum, never re-attaches, and where it has been detached, there remains a particle of dead tissue in contact with the living tissue.

If you have a pyorhea pocket at the side of a root, the tooth wall of that pocket is dead cementum. If you have an apical abscess, whatever portion of the root of the tooth that protrudes into that abscess, is covered with dead cementum.

If a pulp dies in a tooth, there is more or less of a destruction of peridental fibres where the pulp enters the apex of the root.

It is impossible to artificially destroy a pulp, and fill a root canal, without causing enough disturbance at the apex of the tooth to destroy some of the peridental fibres and leave some dead cementum covering its apex.

What is bound to be the result of having this dead tissue buried there? It becomes a lodging place for bacteira which may be floating in the blood stream, which are saphoritic in nature. It has been demonstrated, and cannot be successfully contradicted, that all devitalized teeth, after a few months, have lodged and growing in these places, saprophytic bacteria; almost always a variety of streptococci.

Well, they seem to be doing no harm; they cause no trouble; they do not give the patient tooth-ache; they do not form pus. Why not let them remain?

Rosenow says, and is quoted by Ulrich:

"It would seem, therefore, that focal infections are no longer to be looked upon merely as a place of entrance of bacteria, but as a place where conditions are favorable for them to acquire the properties which give them a wide range of affinities for various structures."

They are like an army becoming acclimated in a new climate. They take up their home there, and get ready for an attack; and when they do attack they are the most virulent kind of bacteria our bodies have to contend with because they have become so well acclimated. The fact that bacteria which have been growing in human tissues are most virulent, is well demonstrated by the fact that if, while doing a post-mortem or dissection, a cut is received, which plants infection from the dead body into the living, that infection is most virulent; and we know that one of the most dangerous cuts one can get is one

with a knife which has just passed through tainted meat.

Another most interesting and important fact regarding bacteria allowed to grow in the tissues a long time, which has been beautifully demonstrated by Rosenow, is the peculiar selective quality which those bacteria acquire. You probably all know of Rosenow's experiments: how he will take bacteria from an ulcer of the stomach, from a heart lesion, or from a dying pulp. By injecting any of these particular cultures into rabbits, guinea pigs, cats or dogs, he produces, with surprising regularity, the same thing in the animal. To illustrate, I will quote briefly from case No. 52 of Rosenow's experiments, this being a case of ulcer of the stomach. Regarding the experiments on animals, he says, in part:

"In the first culture the streptococci from the tooth was injected into four animals and all but one showed hemorrhage or ulcer of the stomach."

And, "Case No. 205.—Acute appendicitis in a man, 27 years old. There was no history of a sore throat . . . In the animal experiments the intraveneous injection of the streptococcus in ascites dextrose broth from the tonsils and tooth, and from the peritoneal coat . . . . produced hemorrhages in all but one of seven rabbits."

Which goes to show that if we allow these bacteria to grow in the tissues, they do acquire a peculiar selective quality and power over certain tissues, which makes them very hard indeed to combat.

Of what use to us is the X-ray, in treating focal infections in the mouth? X-rays are useful to locate dead teeth, pyrrohea pockets, impactions, and to show the extent of cysts and of bone destruction. No one can say, however, by looking at an X-ray picture of a tooth, that that tooth positively is not a menace to its possessor. The dentist or physician looking at an X-ray picture of a devitalized tooth, and expressing an opinion that that tooth is, or is not, a menace, is merely guessing, because there is at the apex of any devitalized tooth an area of lowered resistance which is sure to harbor bacteria, but which will not necessarily cause any destruction which will be evidenced on the film.

What then is to be done with devitalized teeth? Devitalization of teeth has got to stop. When patients are suffering from the effects of focal infection, devitalized teeth must be extracted. They should be extracted before the removal of tonsils, because they drain toward the tonsils, and infected tonsils will often clear up when devitalized teeth are removed.

"The means of protecting the general health, from the secondary effects of dental focal infections, are simple. Success depends upon a full understanding of the situation by both physician and dentist, together with the education of our people to the danger from the primary focus, the insidious progress of the secondary effect, and the intractableness of the secondary effect to treatment

"The dentist should apply treatment on the basis of a careful diagnosis, and his knowledge of the danger to the person who apparently is in perfect health."

"It is unquestionably true that damage, and severe damage is done by stirring up focal infections in persons, apparently in perfect health, when this danger is not forseen and guarded against. When this is done:"

"This is preventative practice in the highest degree. Eradication of mouth foci should not be delayed until secondary effects have become manifest. Every dentist, who has a full appreciation of the situation, will realize that, in the management of cases, he is doing his highest duty to humanity in the preservation of health, by keeping the mouths under his care, free from these centers of distribution of infection."—(G. V. Black.)

The idea that teeth must no longer be devitalized, and that all devitalized teeth must be extracted, is so revolutionary, and this pathology is so different from what we have been taught, that the unthinking man refuses to accept it. I believe, however, that anyone who has studied this thing carefully, can convince any fair-minded man inside of an hour, that it is correct.

Some dentists feel that this is going to rob them of their business, but that is not true. The dentist who will put these failures behind him and strike out and do modern dentistry, will have more work than ever, and he will

be doing good and rendering real service to humanity, instead of doing harm.

Malpractice may be done in removing teeth which ought not to be removed, but greater malpractice has been and will continue to be done, in leaving in teeth which ought to be out. Every devitalized tooth, in a very few months after devitalization, becomes a positive or potential streptococci incubator, and, naturally, a menace to its possessor. It is only carelessness and cowardice on the part of our patients, which makes devitalization necessary. When patients know they cannot have nerves killed, but will be obliged to have the tooth extracted in which they allow the pulp to become exposed, they will come to the dentist in time to avoid exposure and extraction.

Bridge attachments are being successfully made to vital teeth, and as we become more proficient in this class of work, these attachments will be made more successfully than at present.

Nerve blocking, by means of novocaine anesthesia, renders this thing practicable, under careful hands, for the most sensitive tooth in the mouth of the most nervous patient.

Those who are financially unable to afford the above mentioned class of work, will do better with dentures, partial or full, than they will with the horrible three-dollar-a-tooth bridge work that so many of them accumulate under the present way of doing things.

As soon as we unite on this pathology, and people learn that if they let their teeth go until the pulp is exposed it means extraction, they will not let them go until the pulp is exposed. The dentist will get away from that nerve-racking, eye-straining, life-shortening root canal work, to the betterment of his own health, the lengthening of his own life and the betterment of the health, and the lengthening of the lives of his patients.

Having freely quoted from the writings of the following men in preparing this paper, I wish to express my deep appreciation of the privilege of so doing and acknowledge the debt we all owe them and others who have worked on this problem: Black, Gilmer, Rosenow, Kremmer, Ulrich, Billings.

DISCUSSION

DR. E. T. F. RICHARDS, St. Paul: Mr. Chairman, Members of the Medical Society, Members of the St. Paul Dental Society: I wish first to congratulate Dr. Clark and Dr. Earl on these two very excellent papers and to congratulate Dr. Grove on the most interesting microscopic pictures.

The question brought up tonight opens up a great many points for consideration. The term "oral sepsis" is one which is very old, dating back a great many years. In those days, of course, nothing apparently was known about the roots of the teeth. (From that time, we have advanced to the point where we now consider the pulp of the teeth, the peri-apical tissues down to that of the stubborn and almost incurable pyorrhea.) With regard to the question of the latter, there does seem to be quite a difference of opinion amongst the dentists as to its curability and I had hoped that tonight that question would be brought up, but it probably will be further in the discussion. As to the question of whether pyorrhea can finally be cured, I rather understand that the feeling is that that is not true; that a patient with pyorrhea should be made to report to his dentist at successive intervals in order that the gums may be thoroughly cleaned and kept in shape.

We are all convinced that areas of infection wherever they may be have to be eradicated. If we are to be able to handle a case intelligently, it may be only a case of fatigue or it may take the form of muscular pains or arthritis (it of course may be one of a host of things); in such a case the diagnosis is not complete until we have put our finger on the source of infection; so that it has come to the point where the medical men are tremendously interested in the care of the mouth and in their routine of examination they should carefully go into the matter of the teeth and the gums just as they do that of the tonsils, and we need the backing of the dentist in this work.

There is one point which is very important and which Dr. Earl has already brought out and that is the association of several foci of infection. . At the University Hospital, we have kept track of a large number of cases that have been attacked from this point of view and we have found that very rarely have we found any one focus. In practically every case, speaking rather from memory than exactly, we find other areas of infection; that is, we find what we take to be peri-apical abscesses; with that we see frequently pyorrhea, tonsilitis or it may be a chronic sinus infection; so that in medicine we feel that nearly always we are dealing with one more focus of infection and that the tendency to get to a certain focus probably explains the absence of results in a good many cases.

The work of searching for foci is very painstaking and is well worth while when it comes to conditions such as arthritis, etc., so when we do not get results we feel that we have overlooked something. The results naturally vary, very widely, and that is true of any therapeutic agent. We cannot assure the patient before hand that we are going to get results and our attitude is to be that of being uncertain before hand

as to what really will result from the removal of the infected areas. The patient has to be told whether or not there are infected areas. There is no way, today, of knowing before hand what the result is going to be; whether it is going to be an improvement or not. The point is this, that we are not justified in leaving the areas which we are certain are infected; we must urge their removal.

Diagnosis from the radiogram is certainly at times most difficult, and it would seem from the remarks made this evening, and I feel the same way, that given a tooth with a dead pulp and one which we are certain has been dead for a number of years, that whether or not the X-ray is positive, we must advise the complete removal of that tooth. We have to act largely on the question of the dead pulp; the dentist at once can detect that, and on that basis, we advise the extraction of those roots.

There is another point, that in a very sick individual, particularly one with an acute arthritis, there is great risk in extracting two or more teeth at one sitting. In a very sick individual, the teeth should be gone after very cautiously. If there are several to be removed only one should be removed the first time and then let elapse a period of a week or two before the second one is removed. If that rule is not followed, we will see bad results. In the prevention of this problem, Dr. Clark has made a very interesting suggestion that the teeth be not devitalized. The dentists will have to thrash out this matter at some time and the sooner they do it, the better it will be for the medical profession.

THYROID DEFICIENCY

The Iodine Requirement During Pregnancy.

By G. Ennis Smith.
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Among the so-called ductless glands, whose external secretions assist in some profound manner the special activities of various organs and tissue, the thyroid holds the position of chief importance because not only has a definite relationship been established between it and certain pathological conditions and normal metabolic processes but also certain peculiarly human characteristics depend upon its normal function. If its function should fail during infancy longitudinal and mental development are arrested resulting in a species of idiocy known as mongolian cretinism, or if during adult life, among other derangements, mental deterioration sets in, sometimes leading to a definite insanity; thus the thyroid can be considered a "par excellence" human organ.

The physiologically active constituent of the thyroid is an iodine compound and to insure its normal secretion it is necessary that the blood which circulates through the thyroid should contain a sufficient amount of iodine to maintain the secretion and an abundant reserve. If there is not sufficient iodine, under certain conditions, the thyroid is prone to enlarge.

A new aspect of the part that the thyroid performs in the history of the individual has been revealed by a study of a malady that is prevalent among new born domestic animals in the Northwest sections of this continent including Minnesota, where the young are born hairless and dead or die in a few hours. In an investigation carried out in connection with the University of Montana the writer demonstrated that the disastrous effects of the malady resulted from a lack of function of the fetal thyroid due to a deficiency of iodine in the mother's diet and also that the malady could be eliminated by feeding iodides to the pregnant animals. The thyroids of the affected animals are ten times the normal size and are exhausted of the principal physiologically active constituent. When iodides are fed to the pregnant animals the young are strong and vigorous and their thyroids invariably are the normal size and contain an abundant store of the active constituent.

Goitre is very prevalent among the human inhabitants of certain well known regions of Europe and Asia and numerous contentions have been brought forward to account for its prevalence. Investigators now maintain that the limiting factor is the same as found by the writer in the thyroid disturbance of new born domestic animals; that goiter is prevalent in those regions where there is an iodine deficiency in the vegetation. While the general food of the human inhabitants of any section of this continent is not restricted to the products of that section as is common with domestic animals and with the humble inhabitants of many regions of Europe and therefore Americans would not be so susceptible to an iodine deficiency in their environment, yet the alarming prevalence of goiter on this continent indicates that there is a wide sus-

ceptibility to goiter. It is also common knowledge that the thyroid is prone to enlarge during menstruation in young people during ages of twelve between puberty and pregnancy, indicating that there is an increased thyroid activity and that there is often not sufficient iodine in the blood and diet to maintain the required increased secretion.

Examination of a large number of agricultural products of this continent has shown that iodine is absent in the great majority and when it is present there is only a trace. The observations of the writer have led him to assert that during those periods in the life history of the individual when the thyroid performs an increased activity, that is during the fetal growth, puberty and pregnancy, the amount of available iodine in the ordinary diets is near to and very often below the border line of minimum amount required to sustain the increased activity of the thyroid and in order to insure a normal development during those periods and to ward off pathological conditions it is advisable to supplement the ordinary diet with a certain amount of iodine.

One grain of potassium iodide or 1–35 of an ounce of syrup ferrous iodide, U. S. P., taken approximately daily during pregnancy and menstruation and for a period of seven days each month during puberty would be sufficient to meet all the iodine requirement of the thyroid.

THE CONTROL OF VENEREAL DISEASES

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Three diseases are classified as Venereal Diseases: Syphilis (lues), an infectious disease beginning in a local sore and thence spreading, if unchecked, and invading the entire human organism; Gonorrhea, an infectious disease, characterized by a discharge from the genital organs, and thence affecting the reproductive organs of both the male and female; Chancroid, an infectious ulcer of the genitals, local in its course, not invading the general system, comparatively easily controlled and not of great importance. The two former, gonorrhea and syphilis, are, therefore the two which are to be considered from a public health standpoint.

The control of venereal disease would be a comparatively simple sanitary problem if they could be handled like other infectious diseases. We have all the facts at hand necessary to their sanitary control. We know that they are infectious, we know their causes, their incubation period, their mode of transmission, their duration; and we have adequate means of treatment. If we had in addition, control over the liberty of each individual inhabitant of this great land of ours, we could absolutely eradicate all infectious disease including the venereal diseases. But venereal disease control is not a simple sanitary problem. There is no practical way by which venereal patients can be isolated like diphtheria or smallpox patients. These latter diseases run a definite short course, during which the patient can easily be isolated. The quarantining of venereal cases would mean a quarantine from three months to three years—an obviously impracticable procedure. Public sentiment at this day would not support quarantine measures because of the secrecy which custom has surrounded this subject. The venereal diseases involve factors not concerned in ordinary infectious diseases—social, moral and personal factors that reach into the most impulsive actions of life. Thus we must admit that owing to its complexity, its extremely personal touch, and the fact that innovation is prone to meet with distrust, the problem of venereal disease control is a most difficult one. There is the utmost need for tact, judgment, tolerance and sympathy, even in discussing the question and much more so in its practical administration.

The Prevalence of Venereal Disease. Owing to the fact that very few states make these diseases reportable, and that even in those states which make them reportable, the enforcement of the reporting is extremely difficult (because public sentiment clings to the idea of secrecy regarding them) accurate figures as to their prevalence are unobtainable. Fournier estimates that in Paris 15 to 18 per cent of women, and 21 to 28 per cent of men are syphilized. The estimate based on the

best figures obtainable is 12 per cent for London, England. The U. S. Public Health Service considering a million hospital patients, records dating back thirty years, estimates 8 per cent syphilis. This figure is, of course, far too low. Figures compiled from the examinations held in the operation of the selective service law in mobilizing the National Army show 20 per cent syphilis. During the recent mobilization in September ,1917, the venereal rate in the army was 367 per thousand, or over 36 per cent. Gonorrhea is endemic in all the large cities of the United States. In 1901 an estimate was made in New York City showing 162,366 cases of venereal disease. There were 15,969 cases of gonorrhea actually reported, 1,941 of whom were women and 488 children. These figures are for one year only. Forscheimer estimates that 51 per cent of the adult male population has had gonorrhea.

It is estimated that 15 per cent of the admissions to our state hospitals for the insane are due to syphilis. A census of the insane hospitals in the State of New York made in 1917 disclosed 1,370 cases of paresis, 122 cases of tables dorsalis, both diseases due directly to syphilis. Estimating the cost of maintainance of patients of this type to the state, and the resulting loss of earnings from their incapacity, the apalling figure of $5,398,644.00 was reached. The financial loss connected with these diseases is something appalling and affects every taxpayer, yes, even every citizen of the country, and the money spent for their prevention today could be multiplied ten times and would yield large savings in the insane hospitals alone. If you consider that the campaign of education and prevention in the United States Army has reduced the rate fifty per cent one can see what a saving an equal reduction might mean in this state alone.

Admitting the widespread prevalence of of these diseases, if they were restricted to those only who by their own conduct and immorality contracted the disease, we might hold up our hands with the rigid moralist who insists that these diseases are a just visitation of Providence and shall be the horrible example to deter others from vice, *but* how about the innocent? Gonorrhea is responsible for 30 per cent of all blindness, and 80 per cent of all blindness in children under 2 years of age. One third of the gonorrhea in women occurs in married women innocently infected by their husbands. Gynecologists say that 80 per cent of laporotomies for pelvic disease are the result of gonorrhea. The fact that the innocent suffer with the guilty and often their plight is far worse than that of the guilty, and that this state of affairs threatens the whole public health, makes this question one of sanitary control and prevention rather than one of morals. Nothing that may be said need make us forget the moral aspect and its importance. The control of these diseases, their limitation to a negligible per cent of the population, if possible, will not affect our ability to handle the moral problem. Gradually all authorities are adopting the point of view of dealing with this question as a sanitary and public health problem. We must by all means avoid being carried away by extremes in either direction.

Methods of prevention may be grouped as follows:

1. Education in regard to sexual hygiene and venereal disease.
2. Social measures.
3. Medical and hospital care.

1. **Education**. The term education is often very loosely used to mean instruction or the presentation of facts. This is not all there is to education, which in its broader aspects should include the leading of the mind into proper habits of thought and a right outlook upon the problems of life. Education must aim at developing the self control necessary to keep in check the sexual instinct, and inculcate into the individual sound principles of social morality. Education on these lines is a process which must be begun early in life as a foundation on which to base a knowledge of this subject. It is obvious that the first steps in this direction should be taken by the parents, if possible; then later on in school and college the elementary facts of biology should be taught in a scientific way. From this point it is only a step to the teaching of the facts of the social diseases. Then careful instruction can be provided in regard to moral conduct and the sexual relation, such instruction to be based on moral principles and not on the consequences of immoral conduct.

2. **Social Measures.** These may be divided into two groups:

First; the provision of proper social surroundings and of opportunities for recreation and diversion. If promiscuity in sexual relations could be abolished, venereal diseases would soon dwindle to an unimportant place. The sexual instinct is, however, a very strong one. If we were living in a social millenium, every individual upon maturity would be able to satisfy this instinct by suitable mating, but under the present economic conditions this is impossible. In consequence, the great majority of men and women are, for a long time, compelled either to subdue their natural passions or to gratify it by casual intercourse. This is an unfortunate economic condition and is to be remedied by the striving to secure for all a just wage and equal opportunities. It should be made easier for the average man to achieve the economic independence necessary to marriage.

For the social worker there is a vast field in combating the many evils which stimulate sexual immorality. (1) Living in cheerless rooms without proper windows and sunlight. (2) Lack of bathing facilities. (3) Lack of ventilation of sleeping rooms. (4) Unsanitary school conditions. (5) Employment out of school hours. (6) Insufficiency and insuitability of food. (7) Injurious sleeping arrangements. (8) Want of cleanliness. All of these things have a bearing either directly or indirectly on the prevalence of venereal disease. In the recent mobilization of troops, the United States Government has set an example to the nation in its establishment of canteens, social clubs, liberty theatres, etc., for the soldier in camp as well as on leave. The municipalities must follow the lead and establish community centers of recreation so that old as well as young can amuse themselves in proper surroundings.

Second; repression of prostitution and the liquor traffic.

It is unnecessary to dwell on this subject because the nation already stands committed on the policy of repression of prostitution and has taken recently a long step towards the abolishment of the liquor traffic. Let us hope that by the time the nation "goes dry," most distilleries and breweries will be so busy making other products that the illicit liquor business will hold out no great temptation for them.

3. **Medical and Hospital Care:**

First; the suppression of charlatans. Heretofore the venereal patient has been the easy mark for the charlatan. The quack considered him his legitimate prey. The only reason for the existence of these charlatans was the demand for secrecy on the part of the general public. They thrived on the ignorance of the poor unfortunate and the veiled insinuation of his shame. In the years past, the young man who was so unfortunate as to contract a venereal disease, considered that he was disgraced. There was no one in whom he could confide, no place where he might secure information, and naturally large numbers, in their ignorance, drifted into the hands of charlatans, only to get the poorest sort of treatment.

Another widespread evil is the charlatanism as practised by some unscrupulous druggists, who prescribe for these diseases. I dare say that today fifty per cent of venereal patients consult either some druggist, a friend with a sure cure prescription, or use some advertised nostrum. The money thus unwisely spent is of no consequence, but the time thus wasted in self treatment is most precious. We all realize the need of early diagnosis and treatment in tuberculosis and cancer. The need for early diagnosis and competent treatment in venereal cases is equally great to the patient and of far greater importance when we consider the public health.

Second; in order to protect the public as well as the patient, we must go further than to suppress the charlatan and the irregular practitioner. We must supply every patient with the opportunity of adequate treatment. A start has been made in this state by the establishment of three clinics for the exclusive treatment of venereal diseases. One in Minneapolis, which has an average attendance of 50 patients; one in St. Paul which treats an average of 25 at each session; and one in Duluth, which averages an attendance of 30. These dispensaries, under the control of the state board of health, furnish free treatment.

As a further aid, the state board of health furnishes free laboratory service for the diagnosis of both gonorrhea and syphilis, as well

as making the Wasserman test. This gives the physicians of the state a better opportunity to make accurate diagnosis and give better treatment.

Certainly we must admit that this is making it easy for the patient to secure treatment. We must go one step further. That is, we must see to it that every patient not only takes the treatment offered but sticks to it at least until he is rendered non-infectious. By a system of reporting and numbering, the state board of health is endeavoring to secure some kind of control, and at the present time a patient who discontinues treatment while still infectious may be reported to the state board of health which has the power to cause his detention in a hospital until cured. So far this procedure has been applied only in these refractory cases where the patient has a record for incorrigibility. This class is what we may term **carriers,** and includes prostitutes, both commercial and clandestine, prisoners and inmates of institutions. These people are naturally irresponsible, and if infected are a positive source of danger to the community if they are allowed at liberty. They must be restrained until they are rendered non-infectious.

There is a great opportunity for the medical profession to educate the public to the necessity of early diagnosis and immediate vigorous treatment in venereal disease. This has been done in tuberculosis and now more and more people are demanding to know of the doctor whether that cough is tuberculosis so that they can get early treatment and take the proper precautions. The same principle of early diagnosis and treatment apply to venereal disease, and when people generally understand the situation, they will demand adequate treatment, not only for themselves, but for the entire community.

Preparedness on the part of the medical profession consists of—

1. Correct reporting of the disease.
2. Urging patients to secure early diagnosis.
3. Giving them competent and adequate treatment.
4. Knowing the facts, so that when the laity come to us for advice and instruction in sex hygiene we are able to give them scientific information and correct instruction.

THE TRANS-RECTUS INCISION IN THE UPPER ABDOMEN.*

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The proper performance of an intra-abdominal operation demands an incision through the abdominal wall of sufficient length to allow the surgeon, in so far as it is possible, to do his work unhampered by the interference of the abdominal parietes. During recent years long incisions have been made with less hesitancy and with a corresponding improvement in surgical therapy. Nevertheless, every effort should be made to conserve the abdominal parietes to an extent commensurate with the handling of the intra-abdominal problem. It may be true that under absolute asepsis rather long incisions heal as rapidly as do short ones, but this ideal does not always obtain. In any event, the conditions which tend to produce incisional hernia are favored by the long scar; also, the forces acting are, in a measure, proportionate to the length of the scar. When pathological conditions demand long incisions, the injury to the abdominal wall becomes at once of relatively minor import. Long incisions may even be indicated in order to arrive at a diagnosis in some cases, but too often this is evidence of failure on the part of the surgeon to complete his differential diagnosis before operation.

In a former contribution[1] on this subject I stated: "When work in both the upper and lower abdomen is called for in the same patient, it may be a mistake to prolong an incision from one to the other field, especially the pararectal incision. Perhaps it is better to make a second incision in those cases. The slight loss of time will be compensated by decreased trauma from forceful manipulation and by allowing more thorough work, besides the avoidance of severing the nerves and its ill effects." Additional experience of the past six years affords no reason to change the previously expressed opinion.

Certain usages have become established regarding the direction of incisions, structures to be conserved, etc. I wish to consider the

*Presented before the Annual Meeting of the Minnesota State Medical Ass'n., Duluth, August 28-30, 1918.

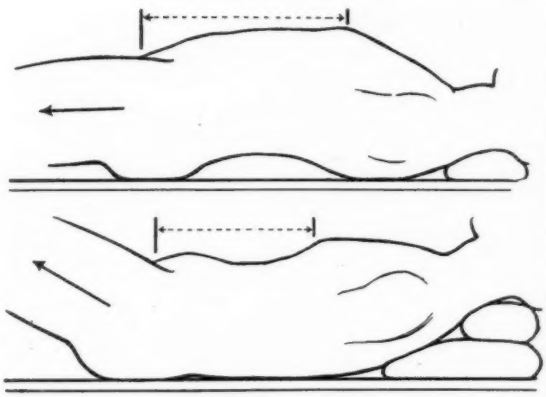

Fig. 1.

Showing how the distance between the pubes and ensiform may be shortened, thus relaxing the abdominal wall and relieving the transverse incision from tension.

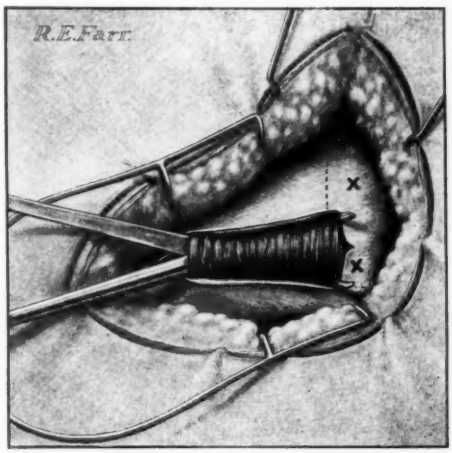

Fig. 2.

Gall Bladder Incision. Anterior aponeurosis of rectus incised. Curved forceps separating rectus from posterior sheath. Dotted line shows position of vertical limb of the incision. X marks position of *linea alba*.

following points: (1) the appearance of the resultant scar; (2) the relative importance of the division of muscular as compared with aponeurotic tissue; (3) conservation of the blood supply; (4) conservation of the nerve supply; (5) anticipated pathology; (6) the facility with which the incision may be made and closed; and (7) the relaxation afforded during operation, and after operation.

1. **The resultant scar.** While the appearance of an abdominal scar is relatively unimportant, it is desirable that any incision be placed so that the scar will be as sightly as possible. It does make a difference. Incisions along Langer's lines result in the sightliest scars.

2. **Relative importance of the division of the muscular as compared with aponeurotic tissue.** Without going minutely into the question of the dynamics of the abdominal wall, we may consider certain points in this connection. Though the lateral pull on the abdominal wall may not be greater than the vertical, vertical tension is easily reduced by decreasing the distance between the ensiform cartilage and the pubes (Fig. 1). There is no way in which the lateral tension can be so diminished. The relative merits of muscular and aponeurotic tissues as supporting structures are still *subjudice*. A study of the structures of the abdominal wall shows that the bundles of fibers of aponeurotic tissue to a large extent lie transversely. It is a well known fact that, even with marked diastasis of the rectus muscle, hernia does not occur without a separation of the aponeurotic fibers. Inasmuch as the aponeurotic tissue of the abdominal wall runs in a general transverse direction and as lateral tension, which cannot be readily overcome, is apparently greater than the vertical, it would appear that Kocher's[2] dictum that the rectus muscle is the least important structure of the abdominal wall may be correct.

Two main objections are made to the division of the rectus muscle: (1) it is said that it retracts between the anterior and posterior sheaths and cannot be reunited unless some method is used to prevent this retraction; and, (2) objection is also made that the hemorrhage is troublesome and is somewhat hard to control as it comes directly from the cut surfaces of the muscle. Perthes[3] has advised the introduction of sutures on either side of the proposed incision, and it is not unusual to see those who employ this incision delay approximately ten minutes for the introduction of these sutures. From my observation I must conclude that the procedure of suturing the rectus muscle to its sheath for the purpose of preventing its retraction is entirely unnecessary, though for the purpose of hemostasis it may be desirable. For many years I have ob-

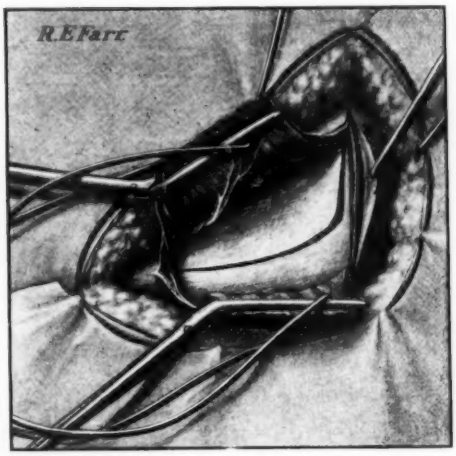

Fig. 3.

Rectus muscle divided between two pairs of angular Pean forceps. Note direction of incision of posterior sheath. Note tenth thoracic nerve appearing in the field. X marks position of *linea alba.*

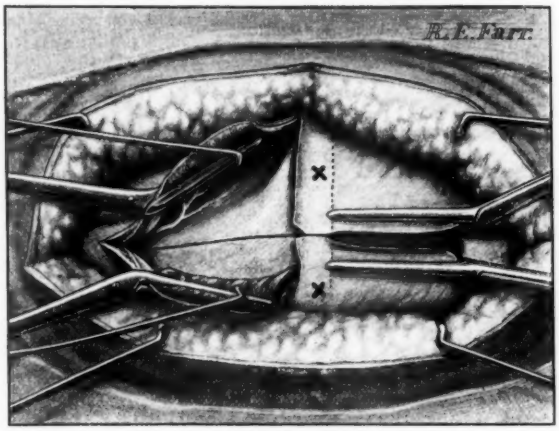

Fig. 4.

Gall Bladder Incision to the left. Stomach and Spleen Incision to right. Note.—Either may be converted into incision shown in Fig. 6. Hemorrhage guarded against by the application of clamps. X marks position of *linea alba.*

served the so-called retraction of the rectus muscle with the following results:

When the incision strikes a *linea transversre*, there is no retraction. In most instances the cut edges of the aponeurosis do not lie as near together as do the cut edges of a muscle. If the incision goes through the red muscle it is followed by some retraction, the degree dependent upon the distance of the incision from a *linea transversae*. The end nearest the *linea transversae* will show a plus amount of muscle projecting beyond the aponeurosis; the end farthest away may show a muscular retraction within the sheath, but in every case observed thus far there was a positive amount of muscle beyond the edge of the aponeurosis; that is, the ends of the muscle were closer together than were the edges of the aponeurosis. In all cases examined, a proper closure of the sheaths of the rectus (aponeurosis) has resulted in an intimate contact of the divided ends of the muscle.

3. **Conservation of the blood supply.** In the presence of a sufficiently free anastomosis, the division of the blood vessels is relatively unimportant. Even with division of the main blood supply, incisions through extremely vascular areas heal with great rapidity. This is well illustrated in work about the face, and clinical experience goes to show that the deep epigastric and inferior mammary arteries may be divided with impunity.

4. **Conservation of the nerve supply.** The abdominal wall is supplied by the lower thoracic nerves which travel obliquely downward and forward at the sides but enter the rectus muscle as large bundles in a transverse direction, when they begin to subdivide into fine branches (Fig. 3). Unless made with extreme care the pararectal incision must destroy one or more of these nerves which are regarded by many authorities as the most important structures in the abdominal wall. Atrophy unquestionably results when any considerable area of the abdominal wall is deprived of its nerve supply. I have observed numerous instances of weakness of the abdominal wall subsequent to the long pararectal incision. The researches of Quain[4] would indicate that visceroparital adhesions are more prone to develop in cases in which the nerves of the abdominal wall have been divided.

5. **Anticipated pathology.** Above the navel the transverse incision offers the most adequate exposure of the various pathologic conditions. The gall bladder, stomach, and even the appendix if not adherent in the pelvis, can be readily dealt with. In most instances retraction of the abdominal wall, both upward and downward, is possible so that good exposure is usually obtained. By supplementing this in-

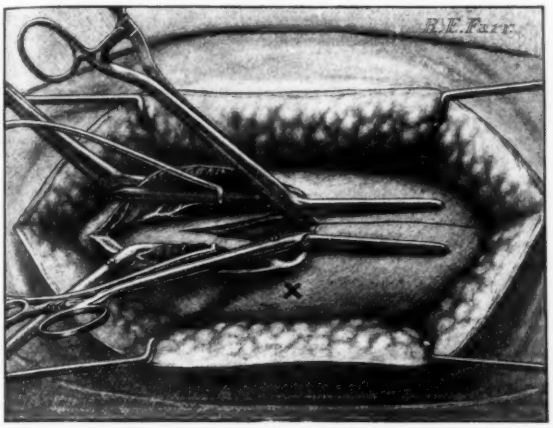

Fig. 5.

Shows technic of making the Transrectus Incision across both muscles. X marks position of *linea alba*.

cision with the near-midline vertical incision when necessary, one is afforded perhaps the most ideal exposure it is possible to obtain. In the matter of choosing incisions, a great deal can be done by varying the size and direction according to the pathology anticipated.

6. **Facility with which incision may be made and closed.** All authorities agree that it requires more time to enter the abdomen by the transverse route. This is especially noted when Perthes' method of muscle-suture is employed or if the bleeding vessels in the severed muscles are clamped individually. With the method to be illustrated presently, however, the element of time is negligible. In closing, the procedure is relatively simple. We have to deal with two layers of aponeurotic tissue, and a point of utmost importance is the fact that the fibers of this tissue lie in bundles parallel with the line of incision so that in closing one may pass the sutures around the fibers and avoid "cutting out," which is not uncommon when closing the vertical incision. In closing the incision, the relaxation afforded by the proper posture of the patient makes it possible to unite the edges of the transverse cut in a relatively short time. When the vertical cut is added to the transverse, the strong lateral pull is at once encountered and the problem becomes more difficult. In this connection an important observation has been impressed upon the writer in comparing the tension upon the sutures used in the vertical cut with that upon those employed in the transverse arm of the "L" incision. In no instance have we found the lateral tension as easy to overcome as the vertical. The transverse incision always comes together more easily than the vertical.

7. **The relaxation afforded during and after operation.** I am convinced that one may obtain greater accessibility through the transverse incision than through the vertical incision of equal length, and most observers agree that there is less post-operative discomfort in the transverse incision patient. This is true, I believe, and is probably due to two important factors: (1) the better exposure afforded by the transverse incision allows the surgeon to do his work with less trauma; and, (2) the line of incision may be relieved of tension to some extent by having the patient assume proper posture (Fig. 1).

Technic.

I wish to outline the incision in the upper abdomen as we employ it, and call attention to the modifications commonly used. Generally speaking, the gall bladder is exposed by a division of the right rectus muscle above the navel at a level which corresponds roughly to the lower border of the liver (Fig. 2). The stomach is exposed by a division of the left rectus (Fig. 4, 5). In either of these incisions we go across the *linea alba* (Fig. 5). If the pathology lies high, the incision may be supplemented by a vertical limb which may be extended to the ensiform if need be (Fig. 4). In making this latter, we avoid the *linea alba* as a matter of

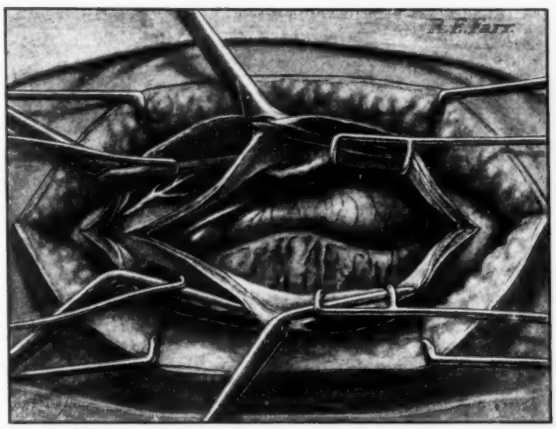

Fig. 6.

Incision through both muscles completed.

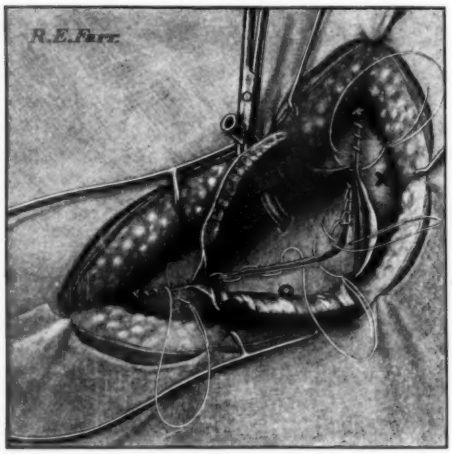

Fig. 7.

Shows method of closing incision. Mattress suture everts peritoneum and transversalis. Clamps removed. The anterior sheath united. Note drainage tube. O marks drainage opening if made below. X marks position of *linea alba*.

preference, dividing first the anterior and then the posterior sheath of the rectus from one-half to one inch from the *linea alba* (Fig. 3). In a large number of instances we have removed the appendix through the transverse gall bladder incision without the necessity of extending it. We have removed the appendix through this incision many times even under local anesthesia.

For the control of hemorrhage the methods illustrated (Figs. 2 to 6) have been devised. A light, angular Pean forceps is placed with one blade behind the muscle, the other in front and made to include the aponeurosis. The muscle is divided between these clamps which are allowed to remain throughout the operation. The upper segment of the muscle is gently loosened from the transversalis which is then split in the direction of its fibers; or, as Meyer[5] has suggested, it may be divided in a diagonal direction corresponding in its course to the Kocher gall-bladder incision. Our preference is for a curved incision in the posterior sheath which in a general way follows the line of the incision in the anterior sheath. It is, however, somewhat farther from the midline and slightly higher than the one in front of the rectus. The posterior flap, therefore, has a curved rather than a rectangular form (Fig. 3).

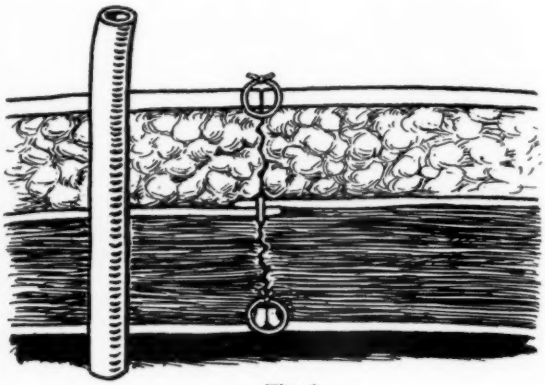

Fig. 8.

Sectional view of closed wound.

Drainage is carried out by means of a stab-wound, generally above the incision in the flap, but below in case the drainage tube would more naturally lie in this position. Post-operative hernia is in this way guarded against to some extent. Enthusiastic reports concerning the transverse incision might lead to the belief that hernia does not occur following it. Our experience shows that hernia does take place in cases that suppurate or in which drainage has been carried out through the incision proper. We have had no hernia in cases that healed primarily, and our impression is that hernia is less liable to occur when the transverse incision is employed.

Closure. A mattress suture (Fig. 7), continuous or interrupted, closes the peritoneum and transversalis muscle, everting the former and taking up some of the slack in the posterior sheath, thus aiding in the approximation of the cut ends of the muscle. The anterior layer may be imbricated provided this is necessary in order to approximate the muscle, using a continuous or interrupted mattress suture (Fig. 8).

The vertical incision still holds the fort, especially in large clinics where old customs are wont to linger longest, though certain modifications are being made with increasing frequency. The past six years have witnessed a vast change in this regard. It is most significant that those who have seen fit to try the transverse incision even a limited number of times are prone to resort to it rather frequently. Boeckman[6] was a pioneer in the use of the

transverse incision. He does not hesitate to divide the rectus muscle either above or below the navel. During recent years Moschowitz[7] has made rather extensive use of the incision, and recently Lilienthal[8] has been favorably impressed with it. Willy Meyer favors combining the transverse with the vertical incision in the midline, dividing the transversalis and peritoneum diagonally after raising the rectus muscle. Quain[9] reports several hundred cases in which he has used the transverse incision with great satisfaction. McArthur's incision, when used for the cases for which he recommends it, is excellent. It conserves the blood supply, muscle, aponeurosis and the very important nerve supply. One should not hesitate to change it to the transverse or vertical in case more room is needed. I have chosen a transverse skin incision when using it.

The impunity with which the rectus muscle may be divided should be kept in mind by all surgeons. If the advantage of this point is utilized in certain cases, an ideal exposure may often be obtained which with the vertical incision is impossible and frequently an almost impossible proposition may be converted into a smooth, easy operative procedure. One should not become wedded, so to speak, to any particular incision. In certain types the vertical, Robson's or Bevan's modification of the same gives the best possible exposure. In the broad, flat, corpulent type the trans-rectus cut will afford the best approach. The advantages of the vertical cut may be used if desired. This practice of varying the incision to suit the case, depending upon the conformation of the patient's body and the pathological problems present, has given us the greatest satisfaction. At the present time we have a patient in the hospital upon whom a cholecystectomy was done through the classical McBurney appendix incision made well below the navel as the gall bladder lay in this position.

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TUBERCULOSIS IN CHILDREN—ITS PREVENTION*

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Tuberculosis in the adult has been likened by one writer to the last verse of a song, the first verse of which was sung to the infant in its cradle.

It is the purpose of this paper to consider what may be done to silence this first verse. That a more active interest is necessary is shown by the fact that over a period of fifty years there has been a steadily decreasing mortality rate for adults suffering from this disease, while the rate for children shows little or no change. It may be charged that statistics may be juggled; however, it would seem that with better system of records and improved methods of diagnosis which have been established, errors would be more likely to increase than to decrease the death rate.

Von Bering and Hamburger were among the first to advance the theory now quite generally accepted, that almost everyone has at some time been infected with tuberculosis and that this infection takes place in childhood. The onset of trouble in after life is regarded as a reactivation of the earlier infection, brought about by a lowering of resistance in the individual due to some excessive mental or physical strain. We see the youth of both sexes frequently breaking down at puberty, the young mother at the birth of a child, the

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business man striving to meet strenuous competition, etc.

Tuberculin tests in young children in a vast majority of cases react positively after the age of four or five years, demonstrating that they have a tuberculous infection hidden away somewhere; this is confirmed by post mortem records of children dying from various causes. The reason that the majority of those who react to tuberculin escape the disease is apparently due to the smallness of the infection which they received, and which has set up an immunity. It is thought that the quantity of infection, the size of the dose, or the repetition of small doses at very short intervals plays an important part.

Hess, in a simple experiment was able to show how the injection of small doses of tubercular bacilli into guinea pigs at frequent intervals for a definite time caused tuberculosis, the intervals apparently being too short for resistance to be established, while a single large dose was easily cared for.

At one time heredity was regarded as the most important factor in the cause of this disease, and while a certain number of undoubted congenital cases have been reported, it would hardly appear that any great stress should be laid on this source except to insist that actively tuberculous persons should not be permitted to marry. Prenatal care should be given. In most of the large cities we now find clinics where the expectant mother is watched and given advice so necessary for her own and the child's welfare. Children born of an actively tuberculous mother should be removed to a safe environment immediately after birth. There should be no delay. It should be compulsory for a healthy mother to endeavor to nurse her baby, but it should be equally compulsory that an actively tuberculous mother refrain from so doing and relinquish the child to the care of healthy persons. In some places there have been established preventoria for the care of these unfortunate offspring, where they are kept for at least one year, and the results have more than justified the efforts made to protect these children. This is in line with work which has been done in preventoria for older children and which has proved so successful.

Mothers' milk apparently does not contain tubercle bacilli; at least Wang and Cooley, at the Sea View Hospital at Staten Island, N. Y. were unable to find them in a number of tests, so that it is probably not through the milk but by intimate contact with the patient that the disease is spread—hence the necessity for the child's removal from the mother's vicinity as soon as possible. Some authorities go so far as to say that every infant who is infected with tuberculosis will almost surely die before reaching the age of two years. At the Farmington, N. J., Preventorium, Hess declined to accept infants under one year showing a positive tuberculin test. Elliot says: "Every child under one year showing a positive reaction will die before it is two years old." Perhaps this is a too pessimistic view; nevertheless, it cannot be too strongly impressed upon those who have the care of these young patients how dangerous even a single exposure to the infection may be, and it must be insisted in every case that children should not be allowed to remain in the same house where they may be exposed to anyone suffering from active tuberculosis.

There has just come to my notice within the past month two instances of tuberculous mothers applying for admission to a sanatorium and requesting permission to bring their young babies, the attending physician in each case stating that the child should not be separated from its mother. If physicians are careless on this point, what can we expect of the laity?

Doctors in the course of their practice are seldom a source of danger, but there is the oft-quoted story of the mid-wife who was in the habit of sucking the mucous from the mouths of new born children under her care, and thereby causing a considerable number of deaths until it was found that she was suffering from a far-advanced tuberculosis. A relative with so-called asthma which has persisted for years should be looked upon with suspicion. Maids in a household and those having the care of young children generally should be carefully scrutinized. Another incident may be reported where two children died of tuberculous meningitis, none of the members of whose family was ill in anyway; one of the visiting nurses after careful investigation was able to elicit the fact however, that a young man, a neighbor, who was unable to work because of illness, was in

the habit of caring for these children when the mother was away. He had active tuberculosis.

Cows milk is a fertile source of infectionl Bovine tubercle bacilli have been found in pulmonary disease, but they play a more important part in diseases of the glands and joints, and the law requiring cattle to be tested should be more stringently enforced. Where this cannot be done, the milk should be pasteurized. Since pasteurized milk has been more generally used, there has been a marked reduction of this infection in children. It is curious to note that Claude Riviere thinks that an infection from Bovine Tubercle Bacilli is not altogether undesirable because of the immunity which is set up. He adds, however, that we must be careful not to permit a massive dose of infection such as might occur where milk was taken from one cow alone and that being tuberculous. Griffith found that in 930 cases of tuberculosis occuring in all ages, the bovine organism was the infecting agent in 18.17 per cent. Wang, whose earlier investigation of tuberculosis among children in Edinburgh agreed with these findings, mentions the decline after pasteurization.

Meat from tuberculous cattle is not so dangerous because of the heat required in cooking, and it is pointed out that if less attention were paid to this and more to the milk, it might be easier to persuade farmers to have their herds tested.

The home should not be neglected by those who care for children. More fresh air is greatly desired, particularly in the homes of our farmers.

The inspection of schools is now receiving considerable attention. There is room for more work, however, so that children who are below par may be cared for. Adenoids, bad tonsils and teeth, especially, should be carefully examined and treated. It is time the medical profession was making itself heard above the educators in regard to the cramming process so frequently seen in our schools today, although this might be less harmful were the pupils' health more carefully watched. It is interesting to note that children who are sent to fresh air schools, now being established throughout the country for those below standard physically, in a short time surpass the supposedly healthy children who remain at the regular school, not only gaining in weight but leading in their studies. This surely needs no comment.

Education among the older children should prove of benefit; lectures by health officers or other physicians to these young people would greatly aid.

Tuberculosis in infancy is more fatal than at any other time in life, and we should remember the old adage in this connection, that an ounce of prevention is worth a pound of cure.

Minnesota Medicine

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EDITORIAL

PUBLIC HEALTH BETTERMENT

In this issue appears the notice of appropriations which have been made along the line of the activities of the U. S. Interdepartmental Social Hygiene Board. This board has at its disposal $100,000 to be used at its discretion for stipulated expenses in scientific research that "will discover more effective medical measures in the prevention and treatment of venereal diseases." This research work must be carried on only at universities, colleges or other suitable institutions.

It is encouraging to find that the federal government is concerning itself in the solution of this important problem. Comparatively recently the federal government agreed to allow dollar for dollar any state appropriation for the control of venereal diseases. Activities along this line in the way of spreading information, supplying free anti-syphilitic medication and maintaining free clinics have been started in this state and have shown practical results.

The tendency of our present State Legislature to omit the appropriation for this activity in the future and thus not to take advantage of the federal aid is difficult to understand.

The medical profession is in favor of activities of this sort which come under the general head of preventive medicine and control of contagion. It is not interested from a pecuniary standpoint however. In furthering preventive medicine the profession is cutting down its own income.

Shall the attitude of the profession be one of "laissez faire" and leave it to the public at large to institute necessary legislative measures for the control of the public health? The average physician has little time to give to politics and prefers to keep out of them. He has still less desire to concern himself in furthering legislation which will indirectly cut down his income. When he sees, however, that certain legislation is pernicious and the result of petty political policies or ignorance he is in duty bound to do his share in his own community towards informing his legislative representative what measures should be carried out.

MINNEAPOLIS CLINIC WEEK

In our March issue the dates May 6th to 9th inclusive were announced for Minneapolis Clinic Week. It was also announced that further information would be given in the next issue. As nothing further could be obtained as to the nature of the clinics in time for our April issue, this further information had to be deferred to the May issue. We take pleasure in announcing in this issue the program for this interesting week as completely as possible. The surgical clinics are necessarily difficult to announce very far in advance.

Clinic Week will undoubtedly prove very popular, this year particularly. Many of us have gotten more or less out of touch with the trend of certain phases of medical and surgical thought during the past year or two. Clinics of this sort are ever valuable but this year for the above reason particularly so.

The banquet Thursday evening will be attractive from a social standpoint, an undeniably valuable side to every medical assembly.

Your attention is called to the nature of the program.

PROPOSED BUDGET FOR A NEW STATE BOARD OF HEALTH ACTIVITY

The Division of Child Conservation of the Minnesota State Board of Health has been in existence for six months under the direction of Dr. E. J. Huenekens. While the time is too short to make any deductions as to its permanent value, sufficient progress has been made to evolve an organization and prove that there is a demand for such service worthy of the support of physicians generally throughout the state.

The history of the founding of this division is interesting. The director was called to Little Falls about a year and a half ago to attend a sick baby. When he arrived he found that the nurse in attendance had gathered seven or eight babies for him to examine and that he was conducting an informal Infant Welfare Clinic. The condition of these babies casually gathered together demonstrated to him the need for such work in the smaller towns, so after consulting with public spirited local people and arranging a preliminary meeting with the local physicians to obtain their co-operation, he returned and conducted an informal Infant Welfare Clinic which was a marked success. These clinics were repeated at three month intervals; the local community nurse doing the follow-up work in the meantime.

The Secretary of the State Board of Health on hearing of the work done by the Director and seeing that it fitted in so well with the proposed line of Child Welfare Work of the Board, for which an appropriation had been asked of the Legislature in 1917, undertook to assist this work on a small scale until the request for funds for such work could be repeated to the present Legislature, and this beginning used as a demonstration of both the need of the work and its practical application. In July, 1918, at a meeting attended by all the pediatricians of the state, it was recommended that the Division of Child Conservation of the State Board of Health be established and Infant Welfare Clinics begun in the smaller communities of the state. This recommendation was acted on at the July meeting of the State Board of Health, the Division formally organized, the appointment of the director confirmed, and an advisory commission for the work suggested. This commission was modeled after a similar body in Massachusetts and consisted of the President, Secretary and Director of the Division of Child Conservation for the State Board of Health, the Secretary of the Child Welfare Division of the State Board of Control, a pediatrician, an obstetrician, and five other prominent men and women of the state interested in Child Conservation.

It was deemed advisable to establish clinics only where there was a local demand and some kind of a local organization which could make the preliminary preparations. The weighing and measuring of children initiated by the Children's Bureau at Washington had preceded the work of this Division, and was of value in awakening interest. The Children's Year Committee also co-operated heartily. Applications for clinics poured in.

When a request for a clinic is received, the head nurse of the Division visits the community, explains the object of the work, advises what is necessary in the way of equipment, meeting place, volunteer assistants, etc. and a day is set for the clinic. The advertising of the clinic is left to the local people. On the day before the clinic the community is again visited to make sure that all preparations have been made; the local physicians are invited to attend, and to them is explained the fact that healthy babies also are received; advice is given as to the proper diet, especially the value of breast feeding; the directions as to clothing and general hygiene, and if pathological conditions requiring medical or surgical conditions are found the patients are referred to the family physician for treatment. The clinic is conducted by the Director himself, or his assistants, Doctors E. D. Anderson and A. E. Johann, with volunteer workers who assist in weighing the babies and taking preliminary histories. The record which is kept is accessible to the family physician. At the close of the clinic an address is given, explaining the plan of the work, dilating upon the necessity for it and announcing that the clinics will be repeated at three month intervals, providing the community employs a public health nurse to do the follow-up work.

Clinics were held in Little Falls, Wheaton, Thief River Falls, Sauk Center and Waseca until the influenza epidemic put a temporary stop to the work. During March, 1919, the work was resumed again and arrangements for clinics made at:

Mountain Iron	March 3
Ely	March 5
Hastings	March 6
Moorhead	March 11
Wheaton	March 12
Brainerd	March 14
Crosby	March 15
Grand Rapids	March 17
Pine City	March 22
Wayzata	March 26
Westbrook	March 28
Wheaton	March 29

The plans for April include:

Canby	April 2
Granite Falls	April 3
Clarkfield	April 4
Blue Earth	April 5
Little Falls	April 6
Sleepy Eye	April 10
Moorehead	April 12
St. Louis Park	April 14
Glenwood	April 15
Brainerd	April 18
Crosby	April 19

The last ten days of April to be given to St. Louis County. In May and June, Madison and Mora will be visited. International Falls has requested that their County be given one week.

The budget placed before the Legislature is the repetition of the request made two years ago, and is deserving of the heartiest support from the physicians generally, and from parents interested in Child Conservation. It calls for a Director on part time, Assistant Director on full-time, three nurses, a stenographer and clerk, a total request of $15,000 per annum.

This work belongs in the field of Preventable Medicine, and as such is as much a function of the Board of Health as epidemiology. It should do much to insure the future against the lamentable findings of draft boards where such a large proportion of adults were found to be suffering from defects due to conditions which could have been easily remedied in childhood.

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

The mid-summer meeting of the Southern Minnesota Medical Association is scheduled for June 30th and July 1st, 1919 at Rochester, Minn. The program committee consists of Dr. A. F. Schmitt, Chairman, Mankato, Minn.; Dr. H. W. Meyerding, Rochester, and Dr. E. M. Hammes, St. Paul. Further particulars will be published in a later issue. Reserve the two days, as an enthusiastic meeting after the interruption due to war absence is indicated.

MINNEAPOLIS CLINIC WEEK

The second annual Minneapolis Clinic Week will be held May 6th to 9th inclusive. Forenoons will be devoted to clinics in the various Minneapolis hospitals, each afternoon will be devoted to a symposium, largely medical.

The program is as follows:

SURGICAL

Hill Crest Hospital:

Tuesday—General Surgical Clinic.
Wednesday—
Thursday—Radium Application, Demonstration and Results. Dr. J. W. Little and Dr. A. S. Fleming.
Friday—Bone Clinic, Dr. E. K. Green.

St. Barnabas Hospital:

Eye and Ear, Dr. J. F. Schefcik.
Abdominal Surgery, Dr. A. E. Benjamin.
Abdominal Surgery, Dr. J. H. Simons.
General Surgery, Dr. F. A. Dunsmoor.
Eye, Nose and Throat, Dr. G. Elmer Strout.
Nose and Throat, Dr. G. L. Doxey.
Abdominal Surgery, Dr. H. C. Stuhr.
General Surgery, Gall-bladder, Goiter, Dr. Earl Hare.
General Surgery, Dr. R. F. Farr.
Surgery, Dr. A. F. Booth.

Northwestern Hospital:

Tuesday—Two Thyroidectomies, Dr. G. Schwyzer.
Nose and Throat Surgery, Dr. E. S. Strout, Dr. Horace Newhart, Dr. Douglas Wood.

Wednesday—Two Ligations for Intrathoracic Exophthalmic Goiter; Excision of Pan-Ovarian Cyst, Dr. F. Poppe.

Thursday—Four Laparotomies, Dr. A. E. Benjamin.

General Surgery, Dr. Arthur Mann.

Abbott Hospital:

General Surgery, Dr. Arthur Strachauer.
Abdominal Surgery, Dr. A. W. Abbott.
Pediatrics, Dr. J. P. Sedgwick.

MEDICAL

Tuesday, May 6th.

Influenza and its Pneumonias, Dr. H. Ulrich, Chairman.

1. Pathology with demonstrations, Dr. H. E. Robertson.
2. Symptomatology, Dr. T. A. Peppard.
3. Bacteriology, Dr. W. P. Larson.
4. Treatment, Dr. E. L. Gardner.
5. Empyemas, Dr. A. A. Law.
6. Surgery, Dr. A. T. Mann.
7. Neurological, Dr. C. E. Nixon.
8. Head Complications, Dr. J. D. Lewis.

Wednesday, May 7th.

Diseases of the Heart—Dr. J. G. Cross, Chairman.

1. Heart Affections: Auricular fibrillation; auricular flutter, etc.; clinical recognition and treatment, Dr. J. E. Hynes.
2. Angina Pectoris and Chronic Myocarditis; diagnosis and treatment, Dr. J. W. Bell.
3. Heart Affections in the Child, Dr. F. C. Rhodda.
4. Surgery of the Heart and Pericardium, Dr. J. W. Little.
5. Selected Demonstrations in Heart Pathology, Dr. H. E. Robertson.

Thursday, May 8th.

Synopsis on Syphilis—Dr. S. E. Sweitzer, Chairman.

1. Syphilis from a Public Health Standpoint, Dr. H. G. Irvine.
2. Pathology of Syphilis, Dr. E. T. Bell.
3. The Importance of Early Diagnosis and Treatment of Syphilis, Dr. John Butler.
4. Tertiary Syphilis of Internal Organs, Dr. J. P. Schneider.
5. Genito-Urinary Syphilis, Dr. F. R. Wright.
6. Differential Diagnosis of Nervous Syphilis, Dr. W. A. Jones.
7. Treatment of Neuro-syphilis, Dr. Angus Morrison.

Discussions opened by Dr. G. M. Olson and Dr. H. E. Michelson.

Friday, May 9th.

Focal Infection—Dr. S. M. White, Chairman.

1. Factors to be Considered in the Conservation or Extraction of Infected Teeth, Dr. T. B. Hartzell.
2. The Relation of Peribronchial Infection to Other Foci, Demonstrations, Dr. F. S. Bissell.
3. Focal Infection as Related to the Eye, Dr. Douglas Wood.
4. Focal Infection as Related to Suppuration in Nose and Throat, Dr. E. H. Parker.
5. A Further Reason for the Reduction of Focal Infection, Dr. H. L. Ulrich.

The Hennepin County Medical Society will hold a banquet, Thursday evening, May 8th, Lt. Col. Seelig of St. Louis will be the speaker.

The Minnesota Academy of Ophthalmology and Oto-Laryngology will give a dinner during Clinic Week, the date and speaker to be announced later.

MINNESOTA ACADEMY OF MEDICINE

Regular meeting of the Academy of Medcine was held at the Town and Country Club, April 9, 1919. President Christison, twenty members and two visitors present.

In the absence of the secretary no minutes were read, and Dr. R. E. Farr was appointed secretary pro tem.

The president asked for volunteers for papers for the next meeting. Election of new members was postponed.

REPORTS OF CASES

Dr. J. G. Cross reported the case of a woman with pain in the right side of the neck. No cause for pain could be found, and after some months Dr. Little resected the ascending branches of the cervical plexus, with complete relief. Dr. Cross could give no explanation of the pathology.

Dr. A. W. Abbott in discussion said that he thought the operation would be unsuccessful, as most operations of this kind are.

Dr. C. M. Carlaw reported the case of a woman with pain in her neck and much like the case of Dr. Cross, and found that this patient had a well developed duodenal ulcer with sub-acute perforation.

Dr. S. Marx White reported as a complication of influenza seen in France numerous abscesses in the rectus muscle. One of these showe l pneumococcus pus, one hemorrhage in the sheath of the rectus, another a tumor in the right rectus over the gall bladder, which disappeared under anesthesia and localized peritonitis was found present, with streptococcus infection.

Dr. A. T. Mann, Dr. H. W. Jones and Dr. Robert Earl reported similar cases.

Dr. H. E. Robertson discussed Zenker's degeneration in relation to this condition.

Dr. H. L. Ulrich reported seeing no abscesses, but many cases of myositis following influenza and pneumonia.

Dr. Oscar Owre reported a case of nephrolithiasis, showing X-rays and specimens of an extensive kidney stone, in which the patient had almost no pain.

Dr. R. E. Farr reported a similar case, the stone weighing 2½ ounces, and called attention to the fact that in large stones pain is less likely to be present than in small ones, and the most painful thing in connection with stone occurred when the stone was moving.

Dr. A. W. Abbott stated that this agreed with his experience.

Dr. Alex Colvin discussed the propriety of removing kidney stones when the other kidney is affected. He reported a case of a child of eight years with complete anuria for several days, with relief followed by the passing of a small stone through the urethra.

Dr. H. W. Jones narrated some experiences of a friend who had been in the war.

Dr. Gustav Schwyzer reported a case of exophthalmic goitre, with a ligation of the right superior thyroid nine years ago, the right inferior thyroid seven years ago, thyrodectomy by Dr. Farr seven months ago, with a rapid enlargement of the remaining portionof the left lobe last month, with acute toxic symptoms. Operation and recovery.

Dr. Gustav Schwyzer reported a case of carcinoma of the stomach, with extensive peritoneal involvement, although history dated back but three weeks.

Dr. Robertson discussed this case, calling attention to research work that had shown that ovarian implantation took place in a large percentage of cases of carcinoma of the stomach.

The meeting then adjourned.

OBITUARY

DR. N. DUMONT

Dr. N. Dumont died March 25th at his home in Little Falls, Minn. He was born in Canada in 1862 and came to the United States in 1889, and located in Little Falls, where he has been practicing since.

DR. FRANK H. HALL

Dr. Frank H. Hall died March 26th at the home of his daughter in Faribault, Minn. Dr. Hall was 73 years of age and was born in Neury, Ireland, coming to this country when he was four years of age. He was a physician at the state penitentiary in Stillwater for many years. Two daughters and one son survive him.

DR. G. A. RENZ

Dr. G. A. Renz, St. Paul, died at the age of 58 years, April 13, at his home. For the past twenty years Dr. Renz has been prominent in St. Paul medical circles having been an official in the St. Paul department of health for the past fourteen years. He was chief health officer in 1900. Dr. Renz is survived by his widow and two brothers.

OF GENERAL INTEREST

Dr. P. H. Munger, St. Paul Park, Minn., has moved to Winthrop, Minn.

Dr. Leonard Rowntree, University of Minnesota, has been made lieutenant colonel.

Dr. A. G. Moffat who has been practicing in Litchfield will return to Howard Lake, Minn.

Dr. Josephine Tofte of Pine City, Minn., is ill in the Hillcrest Hospital in Minneapolis.

Dr. L. L. Gibbon has returned to Lowry, Minn., after spending more than a year as surgeon in the army.

Dr. C. H. Patterson, who has been practicing in Lisbon, N. D., for a short time, has returned to Barnesville, Minn.

Word has been received that Dr. J. C. Staley, St. Paul, has been promoted to the rank of lieutenant colonel.

Dr. Otto J. Seifert, New Ulm, Minn., who has commanded Train Hospital No. 58, has been promoted to the rank of Major.

Dr. G. F. Schmidt, Pipestone, Minn., now in active service with the United States Medical Corps has been promoted to the rank of Major.

Dr. J. C. Michael, St. Paul, has been in Berlin since February on duty in connection with the American commission to negotiate peace.

Dr. L. J. Holmberg, who has been in the Medical Corps has received his honorable discharge and has returned to his home in Canby, Minn.

Dr. L. A. Williams who has been stationed at U. S. Army Hospital No. 33, Arkansas, has returned to Slayton, Minn., to resume his practice.

After serving nine months with the United States Medical Corps in France, Dr. M. E. Withrow has resumed his practice at International Falls.

Dr. C. B. Drake who has been stationed at Ft. Henry, Md., has been honorably discharged and has resumed his practice with offices at 949 Lowry building, St. Paul, Minn.

Dr. C. C. Burlingame, formerly physician, St. Peter State Hospital, now with the American Expeditionary Forces overseas, has been decorated by the Polish government.

Dr. Charles C. Allen, Austin, Minn., became identified with the firm of Drs. Lewis, Rebman and Grise. The new firm will be know as "Austin Clinic."

Dr. John Butler of Minneapolis has returned to the city after one and a half years absence in service in the United States Army. He has resumed practice at his office 1042 Metropolitan Bank Building.

Alpha Omega Alpha, Honorary Medical Fraternity, held its annual banquet at the Minneapolis Club, April 24. Drs. S. M. White, T. H. Dickson, E. P. Lyon, B. Gallagher, H. E. Robertson and S. F. Herrmann responded to toasts.

The United States Interdepartmental Social Hygiene Board, through its Executive Secretary, Dr. T. A. Storey, 1800 Virginia Avenue, N. W., Washington, D. C., announces the following appropriations from the Scientific Research Fund of the Board:

Leland Stanford Junior University Medical School

(1). "Investigation into more effective treatment in acute and chronic gonorrhea," under the direction of R. L. Rigdon, M. D., Clinical Professor of Genito-Urinary Surgery, and A. B. Spalding, M. D., Professor of Obstetrics and Gynecology $2,300

(2). "The permeability of the meninges to anti-syphilitic drugs—an attempt to increase their permeability," under the direction of H. G. Mehrtens, M. D., Clinical Professor of Neurology **2,300**

(3). "Investigation into more effective methods of treating syphilis," under the direction of H. E. Alderson, M. D., Clinical Professor of Dermatology **2,600**

Total $7,200

University of Michigan, College of Medicine and Surgery

(1). "A research for an improved method of demonstrating the spirochaeta pallida in human tissues," under the direction of A. S. Warthin, M. D., Professor of Pathology $6,000

NEW AND NON-OFFICIAL REMEDIES

During February the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-Official Remedies:

Non-proprietary Articles:
Biologically Reactive Food Proteins.
Merck and Company:
Tannin Albuminate Exsiccated-Merck.
E. R. Squibb and Sons:
Cow's Milk Allergens-Squibb.
Egg Allergens-Squibb.
Wheat Allergens-Squibb.
Takamine Laboratory:
Neoarsaminol, 0.15 Gm. tubes.
Neoarsaminol, 0.3 Gm. tubes.
Neoarsaminol, 0.45 Gm. tubes.
Neoarsaminol, 0.6 Gm. tubes.
Neoarsaminol, 0.75 Gm. tubes.
Neoarsaminol, 0.9 Gm. tubes.

NEW AND NON-OFFICIAL REMEDIES

Sulphoichthyolate Preparations.—Preparations containing as their essential constituents salts or compounds of a mixture of acids containing sulphur and designated by the group name "sulphoichthyolic acid" are manufactured from certain bituminous shales. Sulphoichthyolic acid is characterized by a high sulphur content, the sulphur existing largely in the form of sulphonates, sulphones and sulphides. The ammonium compound of this sulphoichthyolic acid—first introduced as ichthyol—has been used extensively. The current estimate of the therapeutic effects of sulphoichthyolate preparations is based almost entirely on the use of ichthyol. As it is not known to what constituent or constituents of ichthyol such effects as it may have are due, the actions of ichthyol can not be transferred to similar preparations which differ from ichthyol in their composition. The use of sulphoichthyolate preparations is still largely empirical, and the evidence for their use unsatisfactory.

Ittiolo.—An ammonium sulphoichthyolate preparation manufactured from bituminous shales found in Giffoni Vallepiana, Italy. Its composition closely resembles that of ichthyol. Since ittiolo closely resembles that of the original ichthyol, it is claimed that its actions and uses are also essentially those of ichthyol. Guiseppe W. Guidi, New York.

Quinine Ethyl Carbonate-Merck.—First introduced as euquinine. It is almost insoluble in water, and is therefore practically tasteless. Its actions, uses and dosage are essentially those of ordinary quinine salts. Merck and Co., New York Jour. A. M. A., Feb. 1, 1919, P. 345).

Biologically Reactive Food Proteins.—The purified and concentrated proteins of foods. These protein products are used in cases in which persons show a peculiar hypersensitiveness or idiosyncrasy to certain articles of the dietary, both to determine to which food it is due and to immunize the patient against the effects of the food. The test for sensitiveness is made by scarifying the skin and rubbing in the protein to be tested, either dry or in solution. When the production of an urticarial wheal identifies the protein to which a patient is sensitive, the patient is desensitized by administration of gradually increasing amounts of the offending food of the isolated food protein itself.

Cow's Milk Allergens-Squibb.—A powder representing all the soluble proteins obtained from cow's milk. It is a fine, white, odorless powder, somewhat soluble in water and physiological sodium chloride solution. Cow's milk allergens-Squibb has the actions and uses of Biologically Reactive Food Proteins. E. R. Squibb and Sons, New York.

Egg Allergens-Squibb.—A powder representing all the soluble proteins contained in hens' eggs. It is a fine, white powder, odorless, somewhat soluble in water and physiological sodium chloride solution. Egg allergens-Squibb has the actions and uses of Biologically Reactive Food Proteins. E. R. Squibb and Sons, New York.

Wheat Allergens-Squibb.—A powder representing all the soluble proteins contained in wheat. It is a granular powder nearly white, odorless, somewhat soluble in water and in physiological sodium chloride solution. Wheat allergens-Squibb has the actions and uses of Biologically Reactive Food Proteins. E. R. Squibb and Sons, New York (Jour. A. M. A., Feb. 22, 1919, P. 573).

PROPAGANDA FOR REFORM

B. Iodine and B. Oleum Iodine.—The Council on Pharmacy and Chemistry reports that while B. Iodine (The B. Iodine Chemical Company) is said to be "Nitrogen Hydrate of Iodin" and B. Oleum Iodine, a 5 per cent solution thereof, the examination made in the A. M. A. Chemical Laboratory indicates that the first is a simple mixture of iodin and ammonium iodid, and the second a solution of iodin in liquid petrolatum. The Council declared these preparations inadmissible to New and Non-Official Remedies because: 1. The composition of B. Iodine is incorrectly declared. B. Iodine is not a newly discovered iodin compound, but a mixture of iodin and ammonium iodid. B. Oleum Iodine is not a 5 per cent solution of B. Iodine as suggested by the statement on the label and in the advertising, but an 0.85 per cent solution of iodin in liquid petrolatum. 2. Since the solution of B. Iodine in water will have the properties of other solutions of iodin made by the aid of iodid, the therapeutic claim made for it is unwarranted. 3. The names "B. Iodine" and "B. Oleum Iodine" are not descriptive of the pharmaceutical mixtures to which they are applied. 4. The preparations are unessential modifications of established articles. The first has no advantage over tincture of iodin or compound solution of iodin, and the second no advantage over extemporaneous solutions of iodin in liquid petrolatum (Jour. A. M. A., Feb. 1, 1919, P. 365).

Misbranded Nostrums.—The following nostrums were declared misbranded under the Federal Food and Drugs Act because of the false, fraudulent or misleading claims made for them: M. I. S. T. (Murray's Infallible System Tonic); M. I. S. T. No. 2, Nerve Tonic; Imperial Remedy; "Japanese Wild Cherry Cough Syrup;" "Japanese Herb Laxative Compound;" Dr. E. E. Burnside's Puri-

fico No. 1; Dr. E. E. Burnside's Purifico No. 2; Dr. E. E. Burnside's Purifico No. 3; Emerald Oil; Bristol's Sarsaparilla; Dr. Belding's Six Prairie Herbs; Dr. Carter's K. and B. Tea; "Brazilian Balm;" "Renal Tea;" Las-I-Go for Superb Manhood; Blood Tabs; Dr. Miles Restorative Nervine; Kilmer's Swamp Root; Homenta; Hinkley's Bone Liniment; Kopp's Baby's Friend; Kopp's; Kopp's Kidney Pills; Reuter's Syrup; Garfield Tea; Di-Col-Q; Sloan's Linament; Bannerman's Intravenous Solution; Cummings Blood Remedy and Giles' Germicide (Jour. A. M. A., Feb. 8, 1919, P. 439).

Cerelene not Admitted to N. N. R.—Cerelene, a paraffin preparation for the treatment of burns, was submitted to the Council on Pharmacy and Chemistry by the Holliday Laboratories with the statement that it was composed of 84 per cent paraffin, 15 per cent myricyl palmitate stated to be purified beeswax, and 1 per cent purified elemi gum, to which are added oil of eucalyptus, 2 per cent, and betanaphthol, 0.25 per cent. It was stated that on "special order" Cerelene has been made containing oil of eucalyptus and resorcin, oil of eucalyptus and picric acid, and picric acid alone. The Council declared Cerelene inadmissible to New and Non-Official Remedies because there was no evidence to show that this preparation had any advantage over simple paraffin of low melting point (Paraffin for Films—N. N. R.) because there is no proof that the medicinal ingredients leave the wax when it is used, and because the constituent "myricyl palmitate" has not been accepted for New and Non-Official Remedies (Jour. A. M. A., Feb. 15, 1919, P. 513).

Beef, Wine and Iron.—So long as one of the largest mail order houses in this country continues to sell Vinum Carnis et Ferri, N. F. in gallon jugs, the drought from prohibition legislation may not be as noticeable as it might otherwise. Seriously, however, is it not about time for the professions of medicine and pharmacy to heave into the discard such utterly unscientific combinations as "Beef, Wine and Iron" (Jour. A. M. A., Feb. 15, 1919, P. 498)?

Misbranded Nostrums.—The following nostrums were declared misbranded under the Federal Food and Drugs Act because of the false, fraudulent or misleading claims made for them: Hall's "Texas Wonder;" King's Liver and Kidney Alterative and Blood Cleanser; En-Ar-Co Oil; Lindsey's Improved Blood Searcher; White Eagle's Indian Oil Liniment; Aqua Nova Vita; Brown's New Consumption Remedy; Akoz Ointment; Akoz Rectal Suppositories; Akoz Powder; Akoz Dusting Powder: Akoz Plaster; Akoz Compound; Fenner's Kidney and Backache Remedy, and Wine of Chenstohow (Jour. A. M. A., Feb. 22, 1919, P. 591).

Styptics.—Ordinary bleeding has a strong tendency to stop spontaneously with the formation of a clot, so that the benefit attributed to a drug that has been used as a hemostatic can not easily be evaluated. Evidence of the current confusion of cause and effect in relation to local hemostatics has been furnished by P. J. Hanzlik. In general he finds that the local application of vasoconstrictor and astringent agents diminishes or arrests local hemorrhage, while vasodilator and irritating agents (without astringent action) increase local bleeding. The value of the newer thromboplastic agents of the kephalin or tissue extract type is considered as still uncertain. Epinephrin remains as the most efficient and desirable hemostatic agent. Tyramin and pituitary extracts were found efficient, and, unlike epinephrin, they do not increase bleeding later. Astringents were found variably effective, ferric chlorid and tannin standing highest, while alum was disappointing. The vaunted cotarnin salts (stypticin and styptol), antipyrin and emetin were found to increase bleeding on local application (Jour. A. M. A., Feb. 22, 1919, P. 577).

Wildroot Dandruff and Eczema Cure.—Dr. Harvey W. Wiley, in his book, "1001 Tests," thus characterizes this preparation: "Contains arsenic, and some phenolic body, probably resorcin; perfumed and colored. The trace of alkaloidal material present was too small for identification. Contains 40 per cent of alcohol, as declared, and less than one-half of 1 per cent of non-volatile matter. Claims that it is an herb compound and a positive remedy for eczema and dandruff obviously untenable" (Jour. A. M. A., Feb. 22, 1919, P. 594).

Benzyl Alcohol.—While experience alone will tell whether or not the local anesthetic benzyl alcohol or phenmethylol will come up to the expectations of the discoverer of its action, it was deemed of sufficient promise by the Council on Pharmacy and Chemistry to warrant its admission to New and Non-Official Remedies (Jour. A. M. A., Feb. 22, 1919, P. 594).

During March the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

Swan-Myers Company:
Swan's Mixed Acne Bacterin (No. 41).
Swan's Pertussis Bacterin (No. 38). (Prophylactic).
Swan's Mixed Furunculosis Bacterin (No. 39).
Swan's Typhoid-Paratyphoid Bacterin (No. 42.) (Prophylactic).

NEW AND NON-OFFICIAL REMEDIES

Tannin Albuminate Exsiccated (Merk).—A compound of tannic acid and albumin thoroughly exsiccated and containing about 50 per cent. tannic acid in combination. It was first introduced as tannalbin. The use of tannin albuminate is based on the assumption that the tannin would pass the stomach largely unchanged, and thus the astringent action be exercised in the intestine where the compound would be decomposed by the intestinal fluid. It is used in diarrhea, particularly that of children and in phthisis. Merck and Col., New York.

Tannin Albuminate Exsiccated-Merck Tablets, 5 Grains.—Each tablet contains 5 grains tannin albuminate exsiccated, Merck. Merck and Company, New York (Journ. A. M. A., March 1, 1919, p. 653).

Neoarsaminol.—A brand of neoarsphenamine complying with the N. N. R. standards (see New and Non-official Remedies, 1919, p. 41). Nearsaminol is supplied in tubes containing, respectively, 0.15 Gm., 0.3 Gm.,

0.45 Gm., 0.6 Gm., 0.75 Gm., and 0.9 Gm. Neoarsaminol is manufactured under the "neosalvarsan patent" by license of the U. S. Federal Trade Commission by the Takamine Laboratory, Inc., New York.

Swan's Mixed Acne Bacterin (No. 41).—Marketed in 6-Cc. vials, each cubic centimeter containing 25 million killed acne bacilli and 500 million killed Staphylococcus pyogenes albus. For a discussion of "Acne" vaccine, see New and Nonofficial Remedies, 1919, p. 296. Swan-Myers Company, Indianapolis, Ind.

Swan's Pertussis Bacterin (No. 38) (Prophylactic).—Marketed in packages of three 1-Cc. vials, containing, respectively, 50, 100 and 200 million killed pertussis bacilli. For a discussion on Pertussis Bacillus Vaccine, see New and Nonofficial Remedies, 1919, p. 287.

Swan's Mixed Furunculosis Bacterin (No. 39).—Marketed in 6-Cc. vials, each cubic centimeter containing 500 million killed Straphyloccocus pyogenes aureus and 500 million killed Straphyloccocus pyogenes albus. For a discussion of Straphylococcus Vaccines, see New and Nonofficial Remedies, 1919, p. 289.

Swan's Typhoid-Paratyphoid Bacterin (No. 42), (Prophylactic).—Marketed in packages of three 1-Cc. vials, one vial containing 500 million killed typhoid bacilli and 250 million each of paratyphoid bacilli A and B, while the other two vials each contain 1 billion killed typhoid bacilli and 500 million each of paratyphoid bacilli A and B. For a discussion on Typhoid Vaccine, see New and Nonofficial Remedies, 1919, p. 292 (Jour. A. M. A., March 22, 1919, p. 863)

PROPAGANDA FOR REFORM

Malt Preparations in Infant Feeding.—Malt preparations have enjoyed popularity for some time in the feeding of infants. A familiar mixture is the so-called malt soup, the use of which was modified by Keller to include potassium carbonate. The assimilibility of maltose has been highly lauded, but the advantage over other carbohydrates has not been definitely proved. Maltose has been vaguely stated to be indicated in the constipation of infants and the retention of calcium facilitated by the use of Keller's formula. However, in experiments on animals it was not found that administration of a base like sodium carbonate produced any effect on the balance of calcium. It has also been reported that in a normal infant the addition of alkali to milk produced an unfavorable effect on calcium retention. Without addition of alkali, malt extract was found to act beneficially on calcium storage, but this is probably not due to the maltose. If malt soup has a favorable effect on calcium metabolism, it is not due to the alkali originally present or added to it. There is no reason at present to attribute the seemingly substantiated benefit from malt preparations on calcium storage to the maltose (Jour. A. M. A., March 1, 1919, p. 656).

Pharmaceutical Manufacturers and "Private Formula" Products.—Sharp and Dohme explain that it is their inflexible rule that all "private formula" orders intended for public distribution are refused until the copy for the "literature" has been studied by their experts. They explain that an order for three preparations which were later the subject of prosecution for misbranding under the Federal Food and Drugs Act were filled and shipped in the belief that the copy had been passed on by their Spanish expert, when in reality this had not been done. The house of Sharp and Dohme feels that it has been done an injustice in the publication of the "misbranded nostrum" notices which gave no hint the preparations were private formula products, and were not sold under the name of Sharp and Dohme. The firm believes that an injustice was done in that the references to these misbranded nostrums will lead reader to believe that they were sold under the label of Sharp and Dohme. There is unfortunately a commercial distinction between products which are made by a firm and products which are sold by it. Whether or not there is any moral difference between profiting by the manufacture of a "patent medicine," that is to be retailed by some one else, and selling the same medicine under one's own name, is a question (Jour. A. M. A., March 1, 1919,p. 669.)

Misbranded Nostrums.—The following nostrums were declared misbranded under the federal Food and Drugs Act because of the false, fraudulent or misleading claims made for them: Alkavis; Sulferro-Sol; Gonorrhea and Gleet 3 Day Cure; Old Indian Fever Tonic; Pain-I-Cure; Walker's Dead Shot Colic Cure (Jour. A. M. A., March 1, 1919, p. 670).

Saccharin—After the War.—Having satisfied a need during the sugar shortage, the manufacturers of saccharin appear not to be content to turn their talents and plants to better uses, but suggest that the great commercial sacrifices made in setting their works into operation to produce saccharin should be rewarded by permission to continue the traffic under post-war conditions. The referee board to which the saccharin question was referred in this country has by no means given a clean bill of health to the chemical, and the people need to be protected from the danger, or at least the deception, of a substitute for sugar which is in no sense a true food (Jour. A. M. A., March 8, 1919, p. 729).

Organo Tablets and Orchis Extract.—The Organo Product Co., Chicago, sells Organo Tablets as a cure for "lost vitality." The Packers Product Co., sold Orchis Extract until it was put out of business by the government in 1918 by the issuance of a fraud order. Even a superficial comparison of the circular letters and booklets used in exploiting Organo Tablets shows a close connection between this humbug and the government declared fraud —Orchis Extract. Has Orchis Extract of the Packers Product Co. become Organo Tablets of the Organo Product Co. (Jour. A. M. A., March 8, 1919, p. 746).

Depilagiene.—The A. M. A. Chemical Laboratory reports that "Franco-American Hygienic Depilagiene", a hair remover, essentially is a mixture of barium sulphate, barium sulphid, sulphur and starch. The amount of barium sulphid was found to be 22.6 per cent.: this is equivalent to about 45 per cent. of commercial barium sulphid. Depilagiene has no claim to originality, as practically all chemical hair removers are composed of some form of sulphid. Naturally, the preparation is likely to cause more or less irritation of the skin (Jour. A. M. A., March 8, 1919, p. 746).

Validity of Provisions Concerning "Patent" Medicines.—In the proceedings instituted by E. Fougera and Co., Inc. against the City of New York et al, the Court of Appeals of New York holds that the provision of the sanitary code is not unconstitutional in that it prescribed the formula disclosure of medicines. The purposes and effects of the code were well within the police power and had the object of protecting the public. "No man has a constitutional right to keep secret the composition of substances which he sells to the public as articles of food" (State v. Aslesen, 50 Minn. 5, 52 N. W. 220). If that is true of food, it is even more plainly true of drugs. But there was one objection to the ordinance, though one that amendment might correct; that the ordinance did not except existing stores of merchandise in the hands of dealers, in that the board of health exceeded the powers delegated to it (Jour. A. M. A., March 8, 1919, p. 753).

The Victory Over Rabies.—Amid the victories on the European battlefield, we may pause to contemplate man's conquest of rabies. During the year 1916, 1,008 persons in the district of Lyons received the antirabic treatment. A single death in this list places the mortality at 0.099 per cent. Since 1900, more than 9,000 persons have received antirabic inoculations, with a total of nine deaths, or 0.1 per cent (Jour. A. M. A., March 15, 1919, p. 800).

Nature's Remedy Tablets.—A. H. Clark, of the A. M. A. Chemical Laboratory, reports that "Nature's Remedy" is claimed to contain ten ingredients; that the manufacturers declare seven of these—burdock, juniper, sarsaparilla, mandrake, rhubarb, dandelion, and prickly ash; and that the manufacturers state they are "more proud" of the other three, but refrain from naming them for fear of imitators. Clark's analysis, supplemented by a microscopic examination by E. N. Gathercoal at the University of Illinois School of Pharmacy, indicated that the unnamed drugs are aloes (or a preparation of aloes,) cascara bark and belladonna root. The microscopist stated that rhubarb, as well as all the other named drugs, if present at all are there in such small quantities that no evidence of their presence was seen. As a result of the examination and a consideration of their powerful cathartic action, it is believed that Nature's Remedy is, essentially, aloes or aloin, cascara, and belladonna with, probably, resin of podophyllin (instead of mandrake)—a common cathartic mixture (Journal A. M. A., March 15, 1919, p. 815).

Misbranded Nostrums.—A "Notice o' Judgment" has been issued declaring the following nostrums misbranded: Chase's "Blood and Nerve Tablets," "Liver Tablets," and "Kidney Tablets"; XXX Tonic Pilis; Egiuterro; Uicure; Sweet Rest for Children; Beaver Drops Comp.; Blood Kleen; Heart and Nerve Regulator; Kidneyleine; Eye Powder; Tanrue Herbs and Pills, and 5 Herbs (Jour. A. M. A., March 22, 1919. p. 883).

Haven's Wonderful Discovery.—The Council on Pharmacy and Chemistry reports that E. C. Havens, Sioux Falls, S. D., requested consideration of a remedy which he claims to have discovered for the cure of influenza. According to the label on a specimen, "This remedy is good for Coughs, Colds, Lung Disease, La Grippe, Influenza, Rheumatism; good for Pains, Cramps, Backache, Lumbago, Neuralgia; for severe pains soak your feet in hot water for 3 nights, add 3 tablespoons of baking soda in water and apply Anti-Flue Medicine to the affected parts." The "discovery" was stated to contain oil of wintergreen, oil of sassafras, oil of black pepper, spirit of camphor, spirits of turpentine, spirit of chloroform, tincture of arnica and alcohol, and was called Havens' Rheumatic Remedy before its supposed effect on "Flue" was "discovered." The Council finds that Haven's Wonderful Discovery is an unscientific, irrational mixture, marketed under therapeutic claims which are unwarranted and without foundation (Jour. A. M. A., March 22, 1919, p. 883).

PROGRESS IN MEDICINE AND SURGERY

A CLINICAL STUDY OF 400 PATIENTS WITH BRONCHIAL ASTHMA. I Chandler Walker, M. D., Boston, Mass. Canadian Med. Ass'n Journal, Feb., 1918. The author aims to present as many useful facts as possible in the determination of the cause and treatment of bronchial asthma. Neither sex, nor nationality nor race played a part in the cause or frequency; occupation played a very slight part. Attacks limited to certain seasons may be important. During the summer months they are usually caused by the protein in the pollen of plants, at other times bacteria are frequently the cause. The length of time the patient has had asthma and the age of onset is important.

Forty-eight per cent of the cases studied gave a positive skin test, that is, were sensitive to some protein. The number of cases who developed asthma under the age of two and between the age of two and five, was as great as at any other age and of these 83% to 90% were sensitive. Four-fifths of those who began in infancy were sensitive, two-thirds of those in childhood, one-half of those during young adult and one-fourth of those during adult life. The relationship between the age of onset and sensitization to different types of proteins was by far most frequent among those who began to have asthma during infancy. The frequency of sensitization to the bacterial proteins was about the same for all ages up to forty years. Of animal emanations the protein of horse hair is the most frequent cause and that of the dog the least frequent cause. The most important point deduced is that of multiple sensitization or sensitization to more than one type of protein—and this is most frequent among those patients who began to have asthma during infancy, quite frequent among those beginning between the ages of two and five, and five and ten, but after these ages it is not very usual.

The treatment of sensitive cases is largely a matter of judgment in deciding which positive test should be first investigated. Those who are sensitive to bacterial

protein may be desensitized by treatment with vaccines. The result of dieting in those sensitized to food proteins and the results of treatment with animal hair, pollen, and bacterial proteins, in those so sensitized have been most successful. W. D. BEADIE.

THE CARDIOTHORACIC RATIO: C. Saul Danzer, (Am. Jour. Med. Sc. vol. 157, April, 1919) believes that an increase in this ratio is of great practical importance in detecting slight cardiac hypertrophy or dilatation. After pointing out the importance of detecting slight enlargement in nephritic conditions and cases presenting systolic murmurs, etc., the author shows how absolutely unreliable actual heart measurements are as indicating slight enlargement. There is a normal ratio between heart and chest transverse diameters ranging from the long chest of the status asthenicus with its "drop heart" and the broad chest of the habitus emphysematicus with its broad heart, according to the author. This fact makes it possible to determine in a given case more accurately whether or not a slight enlargement exists.

An X-ray plate is taken of the heart with the tube 6 feet or more from the plate, the patient sitting up and facing the plate. It is important to wait until any rapid heart action incident to the procedure passes by and then to take the picture at mid-inspiration. The right and left heart borders are measured to the mid sternal line and the sum of these two measurements is taken as the heart diameter. The thoracic diameter is taken at the greatest point and measurement taken from the inner b.rder of the ribs. All measurements are taken in cm. and the ratio of heart diameter to chest diameter expressed in per cent. The normal ranges from 39 to 50 per cent with the average about 45 per cent.

"We may summarize as follows: Anything over 50 per cent was regarded as suspicious. If other evidences pointed against the existence of hypertrophy, values up to 52 per cent were regarded as normal. However, 53 per cent and over were considered definitely pathological."

Note: The author goes on to state that a heart hypertrophy or dilatation may exist in a congenitally small heart with this ratio within the arbitrarily set limit of 52 per cent. The thought occurs to the reviewer that there is no reason why a congenitally large heart may not exceed this limit and still be perfectly normal. It is difficult to believe that this cardiothoracic ratio is so exact that a definite figure like 52 per cent can be made to apply as the outer limit for all cases, knowing as we do that the human organism is subjeet to extreme variations. C. B. DRAKE.

ROENTGEN-RAY INTOXICATION: DISTURBANCES IN METABOLISM PRODUCED BY DEEP MASSIVE DOSES OF THE HARD ROENTGEN RAYS: Starting in to study X-ray burns and later extending their studies to toxic symptoms developing during treatment (C. C. Hall and G. H. Whipple, Am. Jour. Med. Sc. April, 1919) publish a number of dog experiments with autopsies and extensive conclusions from their findings and the literature.

There is a general constitutional reaction in dogs given lethal or massive doses of the hard rays from the Coolidge tube. This reaction is remarkably constant, a double lethal dose will not modify the clinical reaction.

Following the exposure there is a latent period of 12 to 24 hours or longer, during which time the dog is apparently normal; but actually shows as increased output of urinary nitrogen. Vomiting and diarrhea and prostration then become marked with death usually on the 4th day. The non protein nitrogen in the blood shows a marked increase on the day before death.

Autopsy findings show changes confined to spleen and intestinal mucous membrane. The spleen is small and fibrous and there is mottling and congestion of the intestinal mucous membrane-evidence of epithelial injury in the mucosa. Microscopically the epithelium lining the intestinal crypt may show actual necrosis and invasion of polymorphonuclear leukocytes.

Furthermore, this epithelium shows a remarkable speed of autolysis and may vanish by autodigestion a few hours postmortem.

These intestinal changes may account for the general intoxication and vomiting and diarrhea antemortem.

The toxic symptoms and constitutional effect from X-rays closely resemble those following injections of "proteose" in dogs and may be regarded as "non specific" reactions associated with the destruction of much body protein—such as occurs in intestinal obstruction and acute pancreatitis.

The authors find that the so-called roentgen ray anaphylaxis or hypersensitiveness to a second properly timed exposure (it usually takes 7 to 10 days for reaction to subside and destroyed nitrogen to be eliminated) is unsupported by their experiments. In fact, there is some evidence for a slightly increased tolerance to a second dose.

No evidence found of a roentgen ray nephritis.

Increasing the spark gap increases the hardness of the tube causing greater penetration and therefore greater constitutional reaction and subsequent intoxication.

Lange's idea of an acidosis from cellular degeneration and increased catabolic activity-to account for the toxic symptoms is refuted, and Pfahler's idea of the intoxication being due to the formation of noxious gases in the roentgen ray room from the action of the high tension current is likewise dismissed.

Edsall following the suggestion that roentgen rays may have a stimulating effect on enzyme activity in general and particularly in those cases on the enzymes which produce tissue autolysis, use the rays in unresolved pneumonias and reports excellent results.

C. N. HENSEL.

BOOK REVIEWS

THE DOCTOR'S PART. What Happens to the Wounded in War? (By James Robb Church, A. M., M. D., Colonel Medical Corps, U. S. Army, Illustrated. Published by D. Appleton and Company, New York and London, 1918).

Colonel Church as a military medical observer, ordered abroad in 1915, leaves little to be desired in the way of vividly describing the transportation and treatment of the wounded. His book treats almost entirely of the French organizations, hospitals, amublances, etc., and not those of the A. E. F., though he does pay tribute to the young American ambulance drivers who did such splendid and heroic work in the French cause, and who later were made part of the American Field Ambulance. His description of Dr. Carrel's hospital at Compiegne was especially interesting.

The book closes with a description of General Pershing's arrival and his own eagerness to don the khaki service uniform. GERALDINE KILTY, R. N.

SURGICAL CLINICS OF CHICAGO. October, 1918.

The October volume contains a great deal of interest. Dr. Bevan cites five cases of which two are especially interesting. The first, Congenital Wry-Neck is discussed at length and he shows that the contracture is not limited to the Sternomastoid muscle itself but that the deep cervical fascia which forms the sheath for the muscle is extensively involved. He advises and uses the operation as suggested by Mikulicz. The second, Gastric Ulcer, is presented especially for the technique. He offers the opinion that "the majority of cases of gastric ulcer can be cured by a well functionating Gastroenterostomy."

Dr. Daniel N. Eisendrath continues in this number his lecture on the acute abdomen, recalling to our mind the fundamental diagnostic points of the acute intra-abdominal pathology. This chapter is worthy of everyone's attention. It is also well illustrated.

Dr. Charles Morgan McKenna's Clinic consists of several Genito-Urinary Surgical conditions and are very instructive.

Several other authors also have good chapters and go to make up a very interesting volume.

—WM. C. CARROLL.

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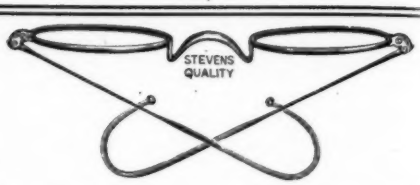

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